LIBRARY OF CONGRESS.
BL 51
Chap. Copyright No.
Shelf J7
UNITED STATES OF AMERICA.

WHAT IS REALITY?

An Inquiry

AS TO THE REASONABLENESS OF NATURAL RELIGION, AND THE NATURALNESS OF REVEALED RELIGION

BY

FRANCIS HOWE JOHNSON

OCT 12 1891
32460

BOSTON AND NEW YORK
HOUGHTON, MIFFLIN AND COMPANY
The Riverside Press, Cambridge
1891

BL51
.J7

Copyright, 1891,
By FRANCIS H. JOHNSON.

All rights reserved.

The Riverside Press, Cambridge, Mass., U. S. A.
Electrotyped and Printed by H. O. Houghton & Company.

PREFACE.

THROUGHOUT the following pages it has been the aim of the author to indicate faithfully, either in the text or in footnotes, the various sources whence he has derived assistance. It is, however, a privilege to make additional and special mention of three writers. To Herman Lotze, to J. B. Stallo, and to Andrew Seth the author is particularly indebted for guidance at difficult stages of the argument.

The title of the book was chosen because it sets forth in the simplest form of words the subject of the discussion.

It is often said, and very generally believed, that science and religion derive their authority from totally distinct sources; that *faith begins where science leaves off;* that science deals with facts that can be proved, while religion is the outcome of conceptions that have no verifiable attachments in reality. It is the object of this book to show that the premises of religion are as real as any part of man's knowledge; and that the methods by which its vital truths are deduced from these premises are no less legitimate than those employed by science.

BAR HARBOR, ME., *September* 18, 1891.

TABLE OF CONTENTS.

CHAPTER I.

INTRODUCTORY.

	PAGE
Reality : the agreement of thought with that which is external to thought	2
We know *things* as groups of events	3
Definite, persistent groups of events attest reality	4
A thing is judged to be real when it fulfills all the promises it makes to us	5
Limits of reality the great question of the day	6
Our conception of spirit as spirit ; reality or illusion ?	7
Science ready to prove its positions : old beliefs challenged to defend theirs	10
Feeling not a substitute for reason	11
Reason, once developed, insists that all beliefs be made agreeable to it	12
Appeal to revelation inadequate, for it assumes that spiritual reality which science questions	14
Our spiritual beliefs in need of readjustment, but capable of verification	15
Concurrence with nature demanded as proof of hypothetical realities	16
Faith, founded on reason, claims now a wider range than ever	18
Verification the result of an endless cross-examination of experience. Equally applicable objectively and subjectively	21
Illusion rooted in reality	24

The belief in personal identity has been developed like other data of consciousness 25
The same true of the conviction of mental efficiency . 27

CHAPTER II.

THE ANSWER OF SUBJECTIVE ANALYSIS.

Four fundamental propositions of common realism . 29
But reason urges to logical consistency, and these appear mutually inconsistent 30
Impassable chasm between consciousness and externality 31
Physical causation seems to coerce mental causation into non-existence 32
Kant's development of this antithesis 33
Attempted explanation of it by the distinction between phenomena and the thing-in-itself 33
More successful destructively than constructively . . 35
But a great stimulus to system-building 36
Hegel and Fichte assume that everything may be deduced from the *ego*, or the idea 41
Fichte, content with this, lets externality go, except as an aspect of the *ego* 42
Hegel attempts to carry over the idea into nature, but illusively 42
Hegel has a better sense of the problem, Fichte of the limitations of the method 45
The answer of subjective analysis not satisfactory . . 48

CHAPTER III.

THE ANSWER OF OBJECTIVE ANALYSIS.

Physical realism, appealing constantly to common sense, seems to be always in agreement with it . . . 50
It claims the indorsement of modern science . . . 51
Herbert Spencer the great English representative of physical realism 51
Like Fichte, assumes that one principle must explain all reality 52

Unlike him, assumes this to be, not the *ego*, but the "persistence of force" 53
Denies, therefore, mental, as distinct from physical causation 55
Bain's statement of the case 57
Herbert Spencer allows mind only as the inner face of physical reality 58
This theory rules out not only free will but purposive action 61
His scheme for the scientific reconstruction of common realism 64
His use, and misuse, of the distinction between impressions and ideas 65
Subjective and objective presentations show the same contrast between *vivid* and *faint* 67
Distinctness, priority, and simplicity, equally applicable on either side 70–74
The answer of objective analysis excludes one half of reality 77

CHAPTER IV.

THE ANSWER OF LIFE.

That proposition expresses reality whose affirmation it is necessary to live 79
Inconceivability a test only within the realm of concepts . 80
Concrete realities do not admit of absolute agreements and contradictions 80
The realities of life to be decided by an appeal to life . 81
The *degree* of our conviction with regard to the reality of anything measured by the extent to which it enters into life 83
On this universal necessity of *living* them rests the inexpugnableness of the four propositions of common realism 84
The four may be condensed into two, affirming the causality of the world and of mind 84

The denial of purposive action, plainly involved in physical realism, — incapable of abiding the test of life . 88
In the realm of concrete realities, irreconcilableness and contradictoriness not necessarily the same . . . 90
We cannot fathom the possibilities of any concrete reality 91
Intervening truths emerging are continually reconciling the previously irreconcilable 91
Mechanical realities, cannot, as genuine, suppress spiritual realities as spurious 93
Only from a central position in the universe can all realities be seen as harmonious 94
Physical science itself obliged, at many points, to assume the truth of irreconcilable propositions . . . 95
We make our nearest approach to reality when we entertain as real a plurality of principles, which we are not able *directly* to combine into a harmonious whole . . 105

CHAPTER V.

THE THING-IN-ITSELF.

Antagonisms of science. Do not these prove that reality is unknowable ? 107
Science and philosophy seem just now to join for agnosticism 108
Two schools of skepticism, — the English half-way school of Spencer, inconsistent ; the German of Schopenhauer and von Hartmann, consistent and thorough-going, and therefore pessimistic 108
Unreasonable dilemma of skepticism, — truth absolute and final, or illusion 109
Our four propositions themselves declared only less variable than the rest 110
But their invariable element large, and continually augmenting 113
Convictions of persuasion, and convictions of coercion . 114
The displacement of old knowledge by new much exaggerated 114

Illustrations from chemistry and astronomy . . 115, 116
Relativity of knowledge not illusion 118
Knowledge of relations is knowledge of reality . . 119
Cosmic relations do not discredit terrestrial relations . 121
Things in themselves, do they exist for thought? . . 122
Noumenon and Phenomenon 124
Is knowledge merely of a sum of relations? . . . 125
Knowledge, arising only through relations, goes beyond them 127
Subjective consciousness of being abides through all experiences 128
This *ego* not isolated from externality, but embodied in it 131
Furnishes a true, though partial analogy for our knowledge of God 132

CHAPTER VI.

FROM THE MICROCOSM TO THE UNIVERSE.

Supposed ancient mariner, becoming possessed of a terrestrial globe, adopts it hypothetically as a representation of the earth 133
Gathers much to support the theory, but dies leaving much unverified 134
Yet his assumption rational, and ultimately verifiable in full 134
Hypothesis of the human microcosm as explanatory of the universe much the same 134
A philosopher, satisfied with physical realism while tracing external relations, becomes dissatisfied when seeking a meaning for them 135
Needs a central, controlling principle, and inquires, why? 136
May reasonably assume it as the result of an analogical experience 136
Finds this in the microcosm, — the *ego*, in the fullness of its relations 137

A self-conscious *ego* the source of creation in the microcosm, why not also in the universe? 138
Analogy, rising from groups to higher groups of organized phenomena, dominant in science 139
The hierarchy of principles 140
Periodic law of recurrent similarities in chemistry . . 141
Mendelejeff's fully verified prophecy of new elements as implied in this 142
Application in biology 142
Molecules not improbably solar systems in miniature . 143
Relations of the human mind exceedingly complex . 144
Not more so than those of the egg 144
No knowledge of evolution except by analogy from the egg 145
Analogies of taxonomic, phylogenetic, ontogenetic series . 145
The last assumed as explaining the two former, not by necessity, but almost entirely by analogy . . . 149
We do use the microcosm to explain much of our world . 151
Ourselves, with subtraction, a norm to explain lower life; ourselves, with enlargement, a reasonable key to higher being 154
Lewes answered by Cope 156
Concepts of analogy give true relations and true knowledge 158
The relations of the *ego* to the physical organism, shall we use these to explain God's relation to the world? . 161

CHAPTER VII.

MECHANISM TRANSFORMED.

If, as Cope assumes, protoplasm is not the exclusive basis of mental action, the organized universe itself may be an embodied form of it 163
We may also assume an atomic soul as the inner elementary reality of the world of things 164
Atomic indivisibility leaves untouched atomic complexity, expressed in multiplicity of reactions 164
Progressive thought, in philosophy and science, renders

both conceptions, God and the atomic soul, indispensable 165
The concept *material atom* not thereby displaced . . 166
Different abstractions from a given reality may be used side by side for the exploration of different fields of thought 168
God as *externally* related to the universe a true and legitimate, but not exhaustive conception 169
The mechanism on which our analogy of the world is based, always the outcome of mind 170
Mechanism, if all-extensive, not therefore of necessity all-comprehensive 172
Professor Clifford, in obedience to the law of continuity, assumed atomic consciousness 173
Common-sense objections to this hypothesis to be examined 175
Science (see Jevons) increasingly disinclined to exclude any quality, absolutely, from any substance . . 175
Illustration from conduction and non-conduction . . 176
Mind, as mind, not necessarily self-determining, but always spontaneous and conscious 179
Chemical hardly distinguishable from the simplest psychical reactions 180
Consciousness never provable, only recognizable from analogy 182
Oft-recurring immobility of life, and restless mobility of matter 182
Mechanism and mind, if coextensive, are not coequal . 184
Physical realism subordinates the latter 185
The reverse of this the true order 185
Mind, as causative, alone explains mechanism, as caused . 186
Evolution handicapped by mechanism, set free by hylozoism 188
Simple, homogeneous can never give qualitative variation 190
The words *response*, *reaction*, imply an inner, psychical nature of things, and no others express the facts of chemistry 191

CHAPTER VIII.

UNITY IN MULTIPLICITY.

The atom, indivisible, spontaneous, and of varied activity no unapt symbol of the soul as known to itself . . 193
Unity of being, however, coincident with an amazing complexity 193
Leibnitz, not knowing how to connect these, devised the doctrine of preëstablished harmony 194
But neither the soul nor the atom has an independence of isolation 195
In chemical combinations we find a symbol of unity in multiplicity 195
A molecule of water is a real unit 196
Molecular unity and molecular aggregation not always easily distinguishable 197
Organic molecules combine into living organisms, the simplest of which are single nucleated cells . . . 198
These seem to show perception, choice, and movements of flight or pursuit 198
Growing differentiation, passing from aggregation to complex unification 199
In man this ever-increasing unity expressed in the intelligent, self-asserting *ego* 203
But throughout this higher state the cell seems to retain its semi-independent life 204
Lymphatic cells apparently veritable creatures of prey . 204
Individual psychic efficiency attested by sedentary but active nerve cells 205
Every cerebral element individually differentiated . . 207
The normal cell has a power of inhibition, strongly suggesting self-control 208
The *ego* consciously related, not to the cells, but to their organized groups 209
The automatic organs, though interdependent, have a measure of independence 210

Specialized activities of lower creatures often surviving division 211
Nerve centres of man, like separate bureaus, each controlled by its special head 212
The *ego* first educates its higher organs, and then depends upon their automatic faithfulness . . . 213
Over-indulgence may raise a subordinate centre to almost demoniacal predominance 214
Proofs, in vivisection, that the brain is not the sole seat of consciousness 215–217
Evidence of subordinate personalities, unknown to the presiding *ego*, brought out by Binet and Janet, in treatment of hysteria 218–221
Perhaps the *ego* dominates a hierarchy of beings . . 222
Even if this supposition is a mistake, the existence of the *ego* as a unity in multiplicity is an essential and most significant fact of our experience . . . 223, 224

CHAPTER IX.

IMMANENCY AND TRANSCENDENCY.

The result reached in the last chapter meets the requirements of a most important desideratum, both in philosophy and theology 225
Spinoza disdains imaginative symbols of God . . . 225
But imagination, though subject to the criticism of reason, is the sole constructive faculty 226
The most comprehensive reality of the disciplined imagination is the human *ego*, in the fullness of its relations 227
Man's relations to men, and to machines, two time-honored symbols of God's relation to the world . . 228
These are legitimate and indispensable, but inadequate . 228
Spinoza's unitary substance amounts to pure nothing, from which extension and thought issue in unapproaching parallelism 229
Essential identity of Spinozaism and modern realism . 230
Law antecedent to being, as Lotze shows, an illusive idea 231

Pantheism the unavoidable goal of abstract ontological thinking 232
Here the symbolism of the human person avails, embracing a diversity of beings, that are distinct yet interrelated, and comprehended in the higher personal unity 233
This symbolism, approved both by Christ and the Apostle Paul, vitalizes the doctrine of the indwelling of the Spirit 234
Immanency and transcendency united by this symbol in a living, abiding reality 236
The knowledge of lower constituent beings progressive in the human *ego*, and doubtless infinite in God . . 238
The relations of the *ego* to the social organism supply a most valuable supplementary symbolism . . . 239
A more particular examination of the relations of the *ego* to its constituent beings and of their relations to it and to each other 242–247
Devotion to the Supreme Being can realize itself only by faithfulness to organic relations 247
Organic and personal association less diverse than often imagined 248
Pantheism, regulated by this analogy, becomes an enriching element of theism 252

CHAPTER X.

EVOLUTION.

But if the *ego* is a result, how can it be used as the symbol of an originating creator? 254
The simple elements to which evolution is traced not its absolute beginnings 255
The study of external phenomena can never conduct us to origins 256
But knowing ourselves as intelligently causative, we may postulate intelligent cause in the orderly adaptations of nature 257
Two theories of non-intelligent causation: unconscious

internal formative powers; natural selection by contact with environment 258
The former may admit half intelligent effort on the part of the creature 259
Charles Darwin the great champion of environment . 260
The modification of domestic animals by selection the fact on which he builds 261
Selection an intelligent act 262
His explanation of the process more properly characterized by the phrase *unintelligent repression* . . . 263
This may intensify, but cannot originate forms . . 264
Only a positive constructive principle can do this . . 264
Organization quite outside mere variability . . . 266
Weismann, after the unicellular stage, substitutes amphigonic reproduction for environment 267
But this cannot raise organisms to a higher plane . . 269
Internal factors, acting determinately, but mechanically, admitted by Spencer, Lewes, Nägeli, Eimer . . 269
Compared with crystallization, as definite, but mechanical 271
Nägeli holds to a law of *improvement*, which he ascribes to "persistence of motion in the field of organic evolution" 272
These mutual contradictions imply a radical defect common to all 273
All give good answers as to various instrumentalities, but err in stopping there 273
The determinations of chemical laws have nothing to do with the interests of a delicately balanced organism . 275
Specialists, criticising specialists, show unconsciously a recognition of the need, in evolution, of intelligent guidance 276
Perception, without self-consciousness, might explain all human inventions mechanically 277–281
The chain of physical causation, pliant to human intelligence, cannot be a barrier against divine intelligence 283
Man cannot live without recognizing the reality of spirit-

ual initiative; why then try to interpret the universe without it? 284
Divine agency not discredited because sometimes reduced to triviality 284

CHAPTER XI.

CREATIVE INTELLIGENCE.

Creation is designed origination 285
The microcosm, at least, does not accredit the idea of origination out of nothing 285
We must postulate a Supreme Being who is coexistent with the order of nature, and who works by means of it 286
Man's creations are, in the first instance, brain modifications 287
This creation by man is elaborate, without hands, selective, progressive 288–290
The specialized organisms of the brain reproduce their kind like animal species 292
May not the adaptations that we trace to a Supreme creative mind be the cumulative outcome of innumerable little minds? 293
Are intelligently formed brain modifications transmissible in any degree? 295
They may be in the lower animals though not in men . 297
The herding instinct in young collies seems to prove this . 298
The instincts of many insects not traceable to intelligence 299–302
Embryotic instincts as foreseeing and marvelously adaptive as any 303
In instincts like those of the sphex and the embryo we seem to have come to the end of organized experience 305
The law of continuity requires us, where intelligence fails in the lower sphere, to seek it in the higher . . 306
The human *ego*, not simply as originating, but as enthroned, guides a process of universal evolution, extraordinarily like that of protoplasmic life at large . 308

There is the same appearance of *non*-finality, of increasing elaboration, of improvement, of consecutiveness of thought in natural and in human evolution . . . 310
It cannot be irreverent to say that God is limited in his working by his ends or by his means 311
This limitation a necessary inference from the main drift of Scriptural representations 311
Lesser intelligences, as in the human organism, may control most of the details of the great process without excluding the divine agency from any point . . 312

CHAPTER XII.

THE PHILOSOPHY OF THE UNCONSCIOUS.

Unconscious intelligence a contradiction in terms that points to some apparent contradiction of facts . . 314
Our primary perceptions, it is said, imply antecedent unconscious reasoning 315
Most of our activities show automatic intelligence . . 317
Unconscious cerebration 317
But intelligence outside consciousness *now* has not necessarily been outside consciousness *always* . . . 317
Conscious intelligence trains the subordinate centres to a *semi*-independent intelligence 319
Renewed vigor of hard-worked subordinate agents, after rest and recuperation, a partial explanation of "unconscious cerebration" 322
The cerebral plexus itself, and the inspiring impulses which visit us, are rationally referred, by the law of continuity, to the divine intelligence 324
Two quite distinct applications of the philosophy of the unconscious 325
One theory locates unconscious intelligence in the creature, one in an all-comprehensive Being of unconscious but unlimited wisdom and creative power . . . 325
J. J. Murphy assumes unconscious intelligence in the lower animals, E. D. Cope, unintelligent consciousness: each phrase alike a contradiction in terms . . . 327

Even Haeckel detaches from mind certain of its characteristics and uses these as if they had the efficiency of the unmutilated whole 329
Von Hartmann, on the other hand, assumes an infinitely wise unconscious All-One 330
The whole strength of his philosophy is owing to the fact that it is a philosophy of the intelligent . . . 331
He illustrates and enforces every theistic argument from adaptation 333
Dwells strongly on the *consensus gentium*, but arbitrarily strips away its universal recognition of creative consciousness 336
Schopenhauer, Hartmann, Cope, Murphy, all true in affirmation, arbitrary in negation 337
Hartmann's denial of consciousness is really nothing more than the assumption that God's consciousness is not like man's 338
His " conscious philosophy of the unconscious " is rather an unconscious philosophy of the conscious . . . 340

CHAPTER XIII.

OPTIMISM.

This conclusion of a Supreme Being, originating and directing the world process, embarrasses us with a wealth of seemingly incoherent purposive intelligence . 342
Special adaptations everywhere in conflict . . . 343
Does God train gladiators, and, like Odin, delight in their combats? 347
The Christian ideal not maintainable if we assume that God could as easily develop his creation without conflict 349
Optimism of the school of Rousseau an hallucination . 350
Our present reaction not less wild 351
Struggle for existence within each species enormously exaggerated 352
Progressive development favored more by mutual support than by mutual struggle 353

From unicellular life up, coöperation has been continually gaining on conflict 355
Bees both organically and intelligently coöperative . 357
The family the transition from the former to the latter . 358
The nation, however imperfect its development, a symbol and prophecy of the Kingdom of Heaven . . . 358
Conscience an ever present indication that God works in us for the realization of this kingdom . . . 359
Conscience, instinctive, yet in some respects antithetic to physical instinct 359
Hedonism utterly untransformable into conscience . . 360
Matthew Arnold and Maudsley, neither a theist, both give as the result of their thought an essentially moral power working in man through the conscience to realize moral ideals 362
Why so long a conflict? Have factors been introduced that have proved unmanageable? 363

CHAPTER XIV.

THE NATURALNESS OF REVELATION.

Evolution as a universal principle modifies all our conceptions 366
Isolated sections of thought will above all need rearrangement 367
Natural and supernatural have hitherto been distinguished as orderly and anomalous 367
Creation and revelation classed as the latter . . . 367
Science has enforced, more and more, the opposite idea of order and uniformity as all-embracing . . . 368
Evolution antiquates this antithesis by embracing both its terms 369
The laws of nature have now become flexible forces, modes and resources of divine working, continuously creative 370
The matter of revelation having been always present, the ever-growing receptivity of it came in with man 371

Gratuitous endowment yields to provision for discipline through effort 372
Both in the physical and in the intellectual departments the treasures divinely granted in the world must be won by overcoming 373–376
The knowledge of God likewise, vague in the beginning, must be sought and won 377
Are the above mentioned factors sufficient for a career of unlimited development? 378
Evolution as a process of specialization tends to stagnate . 379
New types originate in the less specialized lines . . 379
Bagehot — formation of cake of custom, first step: breaking of it, second 380
Ancient social types, both religious and political, rigid . 381
Restlessness of instinct may break an old type, but not form a new 382
Revelation alone, not confined to religion, can do this . 384
Instances: the idea of human brotherhood; truth for its own sake; unity of God 386
Transformation of civic, or ancestral, and of nature religion 387–389
Transitional distancing of religion by ethics . . . 389
Experience soon demonstrated that the latter required the former 390
Philosophy then began to seek God 390
Could not create revelation, but was ready to receive it . 391
Strange aberrations — worship of Mithras . . . 391
Above all Judaism was influential — Proselytes of the Gate 391
The prophetic, not the sacerdotal side, received . . 392
Prophecy affirms of God essential characteristics that philosophy cannot harmonize 394
Not systematized speculation, but immediate knowledge . 394
Prophets not mere organs of national consciousness . 396
Creative personal guidance coming into later human history is repetition on a higher scale 397
Revelation superhuman, but in accord with the order of nature 397

CHAPTER XV.

THE INFALLIBLE CHURCH.

God does not solve the problems which He has intended man to solve for himself 399
In the most perfect educational system, however, the teacher intervenes, when *needed* 400
Revelation *helps* reason and conscience, it is not a substitute for them 401
Yet Catholicism affirms this substitution for the Church, and current Protestantism for the Bible . . . 402
God consults man's good, not always his desire for spiritual ease 404
Developed Protestantism holds church and Bible as helps, not substitutes, for personal appropriation of revealed truth 406
Christianity continuous with Jewish prophecy, not with priesthood and rabbinism 407
Christ founds the church on principles, not prescriptions 408
Christianity a religion of a highly generalized type . . 409
The absolutism of Rome not derived from Christianity . 410
Authority not evil so long as needed 410
Up to a certain point conservation of type as needful as variation 410
When the hour for progress comes, unprogressive types, once invaluable, become deadly 410

CHAPTER XVI.

THE INFALLIBLE BOOK.

Nature gives many free gifts, but more in the germ . 411
The Bible follows nature if it does the same . . . 411
Infinite variety of the Bible and difficulty of immediately synthesizing its different parts 413
God gives responses to present wants, and other responses calculated to elevate the wants . . . 414
Our Saviour, as priest, provided for the present, but his

distinctive work was that of a prophet declaring and initiating a higher type 416
The same thing true of apostolic activity and teaching . 420
Churches admonished by apostles not to rest on the easy truths of the beginning 421
Infallibility, as applied to the Bible, a survival of the Catholic type 422
Keen criticism of Newman on its incongruity with the true function of the Bible 423
Infallibility, if confined to God, leaves for the Bible all the authority that can attach to a book . . . 424
All historic systems of theology have had their *proportions* determined by the supposed needs of the society for which they were formed 426
The refusal to growing ethical ideals of an interpretative function for the Bible threatens to reopen the earlier gulf between religion and morality 428
Constant action and reaction between the Bible and the moral nature sets free the highest revelation of God in the Bible, it does not arbitrarily dictate the revelation . 430
Fatherhood, the ultimate Biblical type of God, plastic, comprehensive, elastic, and yet determinate . . 433
The equation of the Bible and the moral consciousness a true equation 434

CHAPTER XVII.

MIRACLES.

Evolution accredits miracles by transforming nature into a succession of surprises 435
Miracles, like Bible and church, meant to stimulate, not suppress, the religious reason 436
Considered merely as wonderful works (apart from their parabolical value), Christ treats miracles as essentially subordinate 437
Praises a faith that does not need them 438
Paul puts miracles last of the four great ministries . 439

Protestantism, more virile than Catholicism, lays less stress on miracles 439
Christianity, appealing directly to the individual, was at first accompanied with an affluence of these immediate divine testimonies 440
Instance : Christ's confirmation of his forgiveness of sin by the cure of the paralytic 442

CHAPTER XVIII.

THE CONTINUITY OF THE PROCESS.

Creation and salvation different phases of the same process 444
Our conception of the first cannot be modified without affecting our idea of the second 445
Salvation the rescue of both product and process from failure 445
The realization of the life principle of a germ is its salvation 446
The Saviour's parables full of such analogies 446
Two great epochs of moral history : before Christ, and since Christ 447
The latter, as better known, should interpret the former 447
The narrative of the Fall shows the sense of sin as awakened by *moral illumination* 448
Evolution emphasizes this hitherto neglected factor . 449
Innocence possible without illumination, but not righteousness 449
The Fall therefore is also a rise in the scale of being, and this latter aspect is the most important . . . 450
The foreground of darkness has a background of light . 451
The consciousness of sin, at first concrete and limited, slowly generalizes itself 451
The lower self, once revealed as such, may, through moral inertia, be chosen instead of the higher . . 452
The higher nature revealed as an authority within the soul, yet external to it. 453
Variation of the lower, habitual nature, may add zest to

life ; but an attempted *revolution* of it provokes to dogged resistance 454
Not the acts only to be changed, but the channels of desire and habit 455
Sin a choice of self realization on a lower plane than that indicated by conscience 456
Three courses possible : obedience to conscience, even though halting ; evasion ; resistance 456
Elements, and in a measure fruits, of salvation, found from the beginning 457
Did Christ bring in a newness of *kind*, or only of *degree?* 460
The latter the basis of the former 460
He brought a new illumination, and thereby a deeper condemnation 461
The first stage in Christian salvation was therefore, in the profoundest sense, a *fall* 462
The deep consciousness of sin stamped on the mind of the race by its own act, in the crucifixion . . . 463
Man, in the mirror of Christ, knows himself out of joint, and must rise or consciously degenerate . . . 464
Why this apparent excess of illumination was necessary 465
Forgiveness is, as regards the future, relaxing and ideal-obscuring 466
The law of the "spirit of life" more than counterbalances the Christian fall 467
Christianity goes higher than self-realization ; gives self-realization in God 468
Every element in Christian salvation the repetition, on a higher scale, of a factor that was previously energizing in the world 468
Christ and Paul both recognize the continuity . . 470
The revelation of the indwelling of the spirit transforms the impotence of helpless desire into the efficacious energy of filial love 471
Every man an active participator in his own salvation . 472
God is no longer apprehended merely as assisting the soul, but as energizing within it 473
We never outgrow the tree of the knowledge of good and evil 474

APPENDIX A.

THE EVOLUTION OF CONSCIENCE.

The moral sense has originated from the same source as our other instincts 475
Theists often unwilling to allow conscience as natural, because they have thought of nature as an unobstructed current 475
But the course of nature is a conflict and an overcoming 476
Nature knows self-surrender as well as self-assertion: the growth of a tree is the latter, its flowering the former 477
This analogy repeatedly made use of by Christ . . 479
If man is derived from lower natures by differentiation, so may conscience be derived from the unmoral by differentiation 479
To affirm the evolution of conscience is not to deny its reality 480
The blossom evolved from what would have been the leaf, yet not itself a leaf 480
Epigenesis implies that a new element has been superadded 481
Evolution *in connection with*, rather than evolution *from* . 482
Fatuity of trying to account for everything by the few factors known to us 483
Conscience closely and originally conjoined with pain and pleasure, but never explainable from them . . . 484
The most far-sighted and self-restraining selfishness is thereby no nearer unselfishness 485
Primary instincts imperative before pleasure is known as the result 486
Primary instinct underivable; then intelligence; then much of this lapses into secondary instinct . . . 487
Conscience is both primary and secondary instinct . . 488
The categorical imperative primary; its developments and applications secondary 489

The conflict of a divided self illustrated in the behavior of birds 490
Not till one of two such impulses is recognized as implying a higher self does the sense of obligation arise. Here is the birth of conscience 491
Which is the superior impulse may be variously apprehended; that the superior *ought* to be obeyed is invariably apprehended 492
In every radical instinct it is our privilege and duty to recognize God as acting directly 493
The rational element is slowly developed and variable . 494
The conscience of prescription important, but not absolute 496
The prophetic conscience, evolving ever higher moral ideals, the organ of unlimited development . . . 497
Our ignorance of the goal toward which conscience leads signifies little, if He who leads us is in the light . . 498

APPENDIX B.

THE NECESSITY OF CONFLICT.

A world of vital happiness without conflict a baseless imagination 499
All life, from the very germ, is antagonism against the forces of death 499
Life expands in the direction of conflict 500
The necessity of overcoming, the occasion of all joy and gayety 501
Strange blundering of our rudimentary self-knowledge in the pursuit of happiness 501
Because every want, being gratified, disappoints, many philosophies regard the cessation of wants as the *summum bonum* 502
Illustrated in Ecclesiastes 502
Neglect of the fact that each pursuit has given happiness 503
Fully realized being is, like wants fully met, disappointing 504

Happiness the concomitant of progress 504
Each want evolves a higher want, and in that a new creature 505
Happiness only one end ; evolution of moral character another 505
Right cannot be manipulated to mean *agreeable*, as by Herbert Spencer 506
Perfection not stagnation 506
Love, the ever-evolving want, points to a continual progress 507
The ever-expanding ideal secures an ever-expanding personality 507
Conflict with the lower self may and should reach a term 507
But external fields of activity, and coöperation with God, can never be exhausted 507

WHAT IS REALITY?

CHAPTER I.

INTRODUCTORY.

I.

WHAT is reality? Surely *everything* is real. Everything is real that enters into my thought as a modifying influence. The dream is real, the hallucination is real, the mirage is real. No act of consciousness leaves me just as it found me. It has effected something in me; and, as I am a part of the world, it is also a part of the world. The dream, the hallucination, and the mirage are all factors in the great sum of things that make up the universe.

Who can gainsay this answer? and what need is there of further question? Is not our intellectual house thoroughly swept and put in order? Ay, truly, it is swept, and we, as it were, swept out of it. For, if this is a final and satisfactory answer to our question, that which we distinctively call thought comes to an end. We may still be sentient, emotional, imaginative beings. But as soon as we cease to compare, to classify, and to set a value upon our conceptions as more or less true, more or less real, we can hardly be said to be intellectual.

Let us see, then, what we mean by *reality*. There is more than one signification to the word; and the one under which we have been considering it has never interested us, for the very reason that it gives rise to no question. Another, that does interest every one, easily suggests itself. We live in two worlds, — immediately, in the world of our own consciousness, the subjective world of ideas; mediately, through our senses, in the larger world of things. Many of our ideas are conceptions of things. These conceptions may be true or false. They may be the counterparts of the external objects which they represent, they may be quite different from them. Let us say, then, that *reality is the agreement of our thought with that which is external to our thought.*

But again a mocking answer is ready for us, — *Nothing is real.* Nothing in the external world can be truly represented to the mind. Certain changes take place in the nerve tissues of the brain; and, concomitantly with these, images present themselves to the mind. This is all we can ever know. The true nature of that which produces the changes in the brain must be forever hidden from us.

It is true that we all see, in a general way, the same things. But this has no bearing upon the question of their reality. It is only the result of the circumstance that our organizations are similar. If our organizations were not similar, there would be no similarity in our conceptions of things. This is not mere hypothesis. It is proved by the testimony of every-day life. No two of us see exactly the same

things, because our organizations, though *similar*, are not identical. They are not only different at birth, but they become so modified by different courses of education that the mental images formed in different minds by contact with the same environment are often exceedingly dissimilar.

This is discouraging. But we will not give up the quest. There must be some rational, common-sense meaning to our interrogative; otherwise, why should we be forever characterizing things as we do? Why do we say of certain conceptions that they represent reality, and of others that they are *illusions?* We will try again. But first let us see clearly why we accomplished nothing with our second meaning. We said, reality is the agreement of our thought with *that* which is external to our thought. Now the word *that* may refer to a thing or being, or, on the other hand, it may refer to an event, an act, or a process.

The foregoing disparagement of our proposition is pertinent only to the first meaning. The denial of our knowledge of reality cannot be extended to the second. We do know events. Every sensation is a well-known event. It may be true that we can have no direct knowledge of the essential nature, or of the *whole* nature, of things. But we may say, and say truly, that what we call *things* are groups of events. We know them to be what they are by the effects which they produce upon us and upon each other. We know, in other words, the activities of things, the behavior of things, — in short, we know their qualities. If these activities did not appear to

us in definite, persistent groups, there would be no meaning to the word "reality" other than that which led to our first answer, — *Everything is real.* But they *do* appear to us in definite, persistent groups, and hence the distinction between reality and illusion. A thing is judged to be real, that is, the thing that we have conceived it to be, when it presents itself with the full complement of its known qualities. It often requires examination to determine this point. And if examination discloses the absence of qualities that we had assumed to be present, we say our conception, our ideal thing, was an illusion.

Most of the things of the external world are known to us as very complex groups of activities. They are groups of groups. In some cases all our senses contribute to our knowledge of a thing, and there is a different group for each sense. This is at the same time the cause and the cure of illusions. Sometimes it is inconvenient and sometimes it is impossible to test the reality of a thing by an appeal to all the senses that are capable of testifying with regard to it. We therefore form many offhand judgments. We experience, through the sense of sight, a group of sensations that is the distinctive characteristic of a well-known object, and we immediately infer that the object is there; that is, that the power of producing other familiar groups of sensations is associated with the power to produce this one. In most cases our inference is correct. But sometimes we are mistaken. The sense of touch, we will say, refuses to corroborate the sense of sight. Then we

know that we have been deceived, that we have believed in the existence of that which has no existence, that we have imagined ourselves to sustain to our environment certain relations that we do not sustain.

The vision of the thing, as it first came to us, was very real, and so also were the expectations that it excited. The sight of the mirage-created lake in the burning desert is a reality to the weary traveler. It delights his eye and gladdens his heart as much as if it were the sight of a real lake; but it will not assuage his thirst, or send him on his way with new life in his veins. The happiness of the deceived one is very real while it lasts, and so is his more lasting misery when he discovers his lake to be an illusion. Let us say, then, *a thing is real when it is capable of fulfilling the promises it makes to us.*

II.

We may now go on to consider a somewhat different application of the word. We have been regarding it as a quality or characteristic of things. Now let us think of it as a *realm of real things.* We say of a given appearance it is *a reality.* Our question, then, relates to the aggregate of realities that we call the actual world. Assuming that a real world is known to us, what are its limits? What classes of things or beings, of events or processes, are entitled to have the stamp of reality put upon them? This is the vital question of our day. I mean the day that dawned with the Renaissance. Not that it was unheard of until that dawning. It has been the

watershed of philosophic thought in all ages. But ever since that great intellectual awakening, the Western mind has been going through a transforming process with regard to its realities that may, without exaggeration, be likened to organic change. This change has not been confined to any one department. But on every hand, now here, now there, we have been called upon to readjust our ideas, — to accept unfamiliar verities, and to cast down some of those that have longest held sway over the imagination. Nor has this process come to an end. Our lot is cast in the very midst of it. The most vital questions with regard to reality, those that pertain to the very foundations, not only remain unsettled, but are to-day, because unsettled, agitating the minds of men more than they have at any other period of the world's history. And well they may, for we have more at stake.

We have spoken of the *foundations*, but we shall designate what we have in mind more truly if we change the figure and say the *roots*. Our intellectual and moral world is but crudely thought of when it is likened to a building, a thing without life or growth. It is a living, growing, changing reality. It is like an organism. It is a great tree that has spread its branches wide and struck its roots deep. It is easy to change the foundations of a building, to take down, section by section, the crumbling masonry, and replace it with that which is sound. But it is not so easy to furnish an old tree with new roots. There are those, however, who would undertake this for our civilization with a light heart, — who imagine

that what is best in it will grow just as spontaneously, and with more vigor, from conceptions radically unlike those from which it has sprung.

But we must be more explicit. Surely the old tree has survived no small amount of root-pruning, and will unquestionably have to be subjected to a good deal more. What are these conceptions that are judged to be of such vital importance? To come directly to the point, I will say that the first question we wish to discuss in the following pages is this: *Is our conception of spirit as spirit the counterpart of a reality, or is it an illusion?* When we think of the mind of man as a centre of efficiency, as an originating causative entity, are we dreaming a dream? are we simply personifying atoms and forces? or are we contemplating the inmost reality of the world?

This I have called a *vital* question, but is it so? Is it not rather one for philosophers to sharpen their wits upon? and will not the practical, *non*-philosophical world go on its way just the same, no matter what course the controversy may take? To a certain extent it undoubtedly will. The philosophical theories of men often seem to be quite unrelated to their daily activities. They plough and sow and reap, they buy and sell, they build houses and barns, much the same whether they call themselves idealists or materialists, whether they believe in a God or profess themselves to be agnostics. In short, they do all those things which they *must* do for the preservation and enjoyment of life without much regard to the logic of the thing.

But this certainly is not the whole of life. Men always have formed and always will form for themselves conceptions that transcend the constraining influences of material surroundings. They will not forbear trying to interpret the intimations that life begets of existences other and higher than themselves. In that which *is* they discover prophecies of something better that is to be. They frame ideals as to that which *might be* and which *ought to be;* and they shape, or try to shape, their lives to the achievement of these ideals.

Now, every one of these most potent factors in human development is the offspring of our conception of spirit as spirit. Our belief in a possible self better than the self we know is a purely spiritual conception. Our thought of God is but the analogical expansion of our thought of ourselves. All moral distinctions have grown directly from the conviction that each human individual is a soul. The feelings of obligation and responsibility could never have found their way into consciousness except for this same conviction. All those sentiments that we rely upon to make men strong in temptation, to steady them in adversity, to make them capable of sacrifices, have their root in this.

Substitute for this the conception presented to us by the physical realist, and what meaning have we left in the word *self-respect?* How can we respect that which is a mere aggregate of atoms and forces? In what sense can we feel shame or remorse for any result of the interaction of these elements? Everything like praise for what we have

been accustomed to call "good actions" would not simply be out of place, it would be utter inanity. To continue to blame people for evil behavior would be like continuing to burn them for witchcraft after every one was convinced of the unreality of witchcraft.

But why should we enumerate the changes that this intellectual revolution would necessitate? In order to make the list complete we should have to touch upon every department of life. It is not religion and morality alone that would have to surrender their claims. This inherited conviction of ours that we are originating, responsible souls, while it is the ground of all our social relations, at the same time underlies every æsthetic emotion and judgment. Our imagination cannot begin to follow the results of such a substitution. It cannot, by any possibility, exaggerate them.

III.

When science, with a freshly elaborated, vivid reality, forces its way into the society of our settled beliefs, the latter are taken at a disadvantage. It is as when a modern army threatens a community whose defenses are of the most antiquated and undisciplined sort. Our old beliefs are sufficiently well organized on a peace footing, but they obtained possession of their realm so long ago, and there has been so little serious opposition to their authority, that they have at their disposal neither the weapons nor the tactics to meet the trained forces of science.

For instance, our belief in spirit as spirit is one that came to us as an inheritance. We have never found it necessary to justify it by a process of reasoning. Its credentials, if it ever had any, have been so long lost sight of that they are practically *non*-existent.

Just the reverse of this is true of the scientific belief that comes to try conclusions with it. It is ready to prove everything. It does not refer to habit or custom or prestige for its right to be. It rests its case solely upon that which *is*, that which can be tested, verified, and shown to be real. Its affirmations are supported by redoubtable inferences, and behind each one of these is a corps of facts that has been trained down to the last degree of efficiency. All its members work together with a precision that nothing less well organized can stand against.

There is no denying that this is an awkward state of things for our old beliefs. What is it best to do? There is first to be considered the policy of *non*-resistance. We are in no position to repel this form of attack by an appeal to reason. Let us therefore refuse to reason. Let the opposition have it all their own way. Let them prove and demonstrate to their hearts' content. Let them vaunt their own superiority, and pity the intellectual weakness of our positions. We are not subjugated. The victory of our adversaries will be a purely formal one. We have still on our side the certainties of the emotional world, the verities of feeling. Men have in all ages believed firmly in realities that could not

be demonstrated, and they will continue to do so. The natural world may seem to testify against us, but the supernatural, the realm of religious belief, rules the imaginations of men with greater power. As Cardinal Newman has said, "deductions have no power of persuasion. The heart is commonly reached, not through the reason, but through the imagination. . . . After all, man is *not* a reasoning animal; he is a seeing, feeling, contemplating, acting animal." [1]

There is unquestionably much truth in these considerations. The heart is every day winning victories over the head. Feeling and imagination are mighty powers in the world. And could we take into our calculation the history of the whole human race, setting over against the actions that have been the outcome of a logical process those that proceed from the direct stimulation of consciousness, we should be obliged to say that man, as represented by the balance. is not a reasoning animal. But, after all, he is a reasoning animal; and under certain educational influences he reasons a great deal more than he does under others.

It is said of the Chinese that they never ask of a religion, Is it true? but Is it good? [2] This is very interesting to us, because it is the reverse of our habit. We certainly have respect to the fruits of a religion: we insist that they shall be good. But we are not indifferent to its truth. We are so made up that we cannot truly reverence, or be much influ-

[1] *Grammar of Assent*, chap. iv.

[2] *The Chinese*, by Dr. Martin, p. 123.

enced by, a belief that we suspect of being without foundation in reality.

However carefully we may conform to the observances of such a religion, we secretly despise it, according to the measure of our distrust. And, however beautiful and moving its accessories may be, we are as little inclined to make real sacrifices for it as we are to be led into battle by a commander who is brave and enthusiastic but nothing more. For better or for worse we are wedded to enlightenment, and it is useless for us to fight against the fruits of this alliance. Under its influence we become more and more reasoning animals, more and more capable of acting and suffering for reason, less and less willing to lend ourselves to that which seems unreasonable, or to honor those who do.

In the evolution of animal life on our planet, there was a time when there was no such thing as air-breathing or lung-breathing creatures. The dry land had not yet appeared, and gill-breathing was the condition of existence. But with the emergence of the land there was added the possibility of a new and higher kind of existence. Fishes could not avail themselves of this possibility. But somehow animals with lungs appeared on the scene, and they took possession of the earth. But these higher species could never go back to their old estate. In gaining the higher condition they had lost the lower.

Just so it has been with the development of the reasoning faculty in man. Having once learned to live by it, we cannot turn the course of development

backward and live without it. We cannot honor it in one department of our thought and exclude it from another. If we try to do it our inconsistency will betray us. For, so strong is our craving for a rational indorsement of our beliefs, that, notwithstanding our repudiation of reason, we shall find ourselves continually resorting to it for our own comfort and for the support of others, — glorying in it if it indorses our convictions, happy to lay our burdens upon it, but unwilling to follow its lead. We cannot, therefore, adopt the policy of *non*-resistance. We must meet the new reality with reason, or make up our minds to lose that which it assails.

The next question, then, for us to settle is, *how* shall we meet it? There is the old way, — that which confronts the realities of nature with the realities of revelation. Revealed religion has always justified itself with facts and with arguments, and its arsenal was never fuller of these than it is to-day. How will it do to defend ourselves something as follows? The word of God communicated in the Scriptures of the Old and New Testaments, and the miracles of which these contain the record, are facts whose testimony is more direct, more easily interpreted, than those that are so miscellaneously brought together for the purposes of science. These latter have only the most remote connection with the conscious life of man. They are dumb realities in comparison with those that address themselves immediately and plainly to his spiritual understanding. Let us, then, fall back on the truths of revelation. They are on a higher plane than the truths of science, and

it can never reach them. No reasoning can prove that Jesus Christ did not rise from the dead.

This answer to the demonstrations of science has seemed a sufficient one to many. But really it is no answer at all. For it is based upon the assumption of that very reality that science pronounces to be an illusion. It does not give battle to the invaders; it only tries to get away from them. In short, there is no way out of this difficulty except by going to the very bottom of things. Our old beliefs cannot retain their intellectual supremacy unless we meet science on its own ground in the discussion of the fundamental question to which we have invited the reader.

Everything comes back to this. Every question that divides the agnostic from the believer finally resolves itself into this one. And we can never have intellectual peace or strength till we have answered it. We must come down from our proud eminence of prestige and authority to train ourselves in the realities of the present. Does science refer to facts that can be verified? so must we. Does it prove its positions step by step? so must we. If we wish to retain our hold upon all those higher experiences and convictions that are of so much worth, we must for the time separate ourselves from them, and occupy our thoughts with the commonplace experiences that are known not simply to the elect, but to every living man.

Doing this, we shall not only be able to fight our way back to them, but shall at the same time conquer for them an intellectual position that will

greatly increase their power. All the world over, it is necessity that coerces us to the acquisition of the best things. And if religion, by its controversies with science, is forced to develop its rational, intellectual side into a full and honorable equality with its emotional, we shall, in the end, have to thank our antagonist not only for its contradictions, but also for its invaluable lessons as to method. What we at first regretted as a menace will then be recognized as the source of our greatest gain.

There is a story of a benighted traveler, who, stumbling over a precipice, arrested his fall by grasping a shrub that grew upon its edge. He could not pull himself up, for the shrub had no firm hold upon the soil. He felt it continually loosening under the strain of his weight. His only hope was that some one might come to rescue him from above. But no one came. The shrub gave way. Yet the fate that seemed so inevitable did not follow. A firm shelf of rock only a few inches below his feet received him; and with the morning light he went on his way rejoicing. Even so will it be when we have lived through the present crisis in the transformation of our beliefs.

In the first moments of our alarm, our whole attention was concentrated upon the necessity of retaining our old beliefs in the precise forms in which we had always held them; and the characteristic of these that appeared to constitute their greatest strength was their isolation from the rest of our beliefs, their peculiar and supernatural origin. The revelation contained in the Bible would, we thought,

lose all its prestige and authority over men unless it were held to be a communication from God different, not simply in degree, but absolutely different in kind, from all other communications. It seemed to us that the claim of inspiration for the writers of the Bible would not be worth maintaining if it were to be classed with the inspirations of other great men. The belief in the Divinity of Christ would lose its most valuable significance were it not rigidly kept apart from the recognized indwelling of the Spirit in the Prophets. To associate it with the divine element that exists, latent or developed, in all men, was a supreme act of sacrilege.

But ere long it began to appear that this special, infallible authority had not the hold upon reality that we had thought. Its attachments were continually weakening while we were clinging to it for our lives. As our knowledge of all that men had thought and believed widened, other infallibilities ranged themselves alongside of ours. Other miracles asked for credence in support of other religions. And what was worse, it became certain, after a time, that the intelligent world was more and more withholding its faith from all that part of its annals that recorded events antithetical to nature, and giving it increasingly to that which could prove its agreement with the order of nature.

True, the world has not yet wholly abandoned the idea that the exceptional, the irregular, the marvelous event is to be regarded as the seal of truth. But belief does not grow in this direction; and it cannot, because the whole order of thought in which

it originated is passing away. In that order of thought, God was a Being who once upon a time created the world and remained separate from it. The order of nature was a uniform repetition; but the Being who made it at times interfered with this order for the purpose of impressing himself upon the intelligent creatures who were a part of it.

But in the new order of thought, God did not at a given time call into existence a complete and finished world. He has not dwelt apart from his world. But he works in it, constantly creating, constantly exhibiting new and wonderful products by means of new combinations and modifications. Yet, in this constantly growing world, nothing is absolutely new. Everything declares itself to be related to everything else. The test of reality therefore becomes, not isolation, but connection. Whatever can show itself to be in the line of development has a higher claim on our credence than that which cannot.

From henceforth we become not only willing, but eager, to surrender the claim of isolation for the events which have been the vouchers for our religious beliefs. We ransack history for relationships and analogies. We are as solicitous now for their adoption into the order of the world as we formerly were to assert their separateness from it. But, when this is accomplished, how are we situated? Are not our beliefs, thus harmonized with nature, transformed? That depends upon what we make of nature. In short we come back to the fundamental question, — what is reality?

But, it will be asked, what, in all this warfare of reason, has become of faith? The answer is, that it holds the same position that it has always held. No matter how much we give ourselves to argumentation, we can never dispense with that activity of the mind which we call faith. It is the faculty or function of the soul whereby we grasp all general principles; and were we to intermit the exercise of it, every kind of progress would forthwith come to an end. It is not a matter of *less* importance than it has been represented to be in our theological methods, but a matter of far wider import. Faith in persons is not the only kind of faith. And whether it relates to persons or to principles, it is never the antithesis of reason. It is founded upon reason.

If asked to define faith, I would say, it is the *will* to trust in and act on probabilities that have been rationally constructed from experience. All the higher truths of science rest upon just such probabilities. They have been first attained, and after that retained by the exercise of faith, just as much as the truths of religion have been. Every appeal to the law of continuity is an appeal to faith. That is, every time we are asked to accept a scientific generalization, we are asked to give our assent to a proposition that cannot be demonstrated, but that can be shown to rest on rational probabilities. Such an assent is a pure act of faith, and, at the same time, a wholly rational act. For, although the proposition to which the assent is given cannot be demonstrated, the probabilities upon which it rests can be shown to be rational probabilities.

IV.

The first step, then, toward the answer of our question will be to ascertain whether the experiences which underlie our belief in spirit as spirit are equally verifiable with the experiences from which science makes its deductions. If we find that they are, we shall be in a position to make the further inquiry, Are the processes by which we ascend from our verified experiences to our hypothetical realities legitimate?

How, then, does science verify what we may call its mother realities?

In the earlier part of this chapter, when we were trying to find out the meaning of reality as related to the things of the external world, we had occasion to remark that the cause and cure of many of our illusions were to be found in the same conditions. In those cases where all or several of our senses contribute to our knowledge of a thing, the truth of a judgment concerning it, founded upon the testimony of one sense, may be sought by subjecting it to the judgment of another sense. This is the natural, instinctive way of verification practiced alike by children, savages, and scientific men. But it is not the only way.

We are acquainted not alone with the direct relations which things sustain to us, but also with a countless multiplicity of relations which they sustain to each other; and by the patient, exhaustive study of these the student of science is able to reach a

knowledge of the invariable characteristics of things that is far beyond anything that our direct knowledge can supply. By repeated experiments he is able to get at the truth with regard to them, to hunt them from one hiding-place to another till he knows them thoroughly.

At first he is baffled by a great variety of apparent variations in their behavior. But, suspecting that these variations are caused, not by any caprice in the element that he is investigating, but by the conditions to which it is subjected, he employs devices by which he is able to vary, to restrict, and to measure the conditions in a prolonged series of experiments, the results of which he carefully records. Thus he becomes possessed of a register of the possibilities and the impossibilities of things, — of their differences and also of their resemblances. The differences extend his knowledge, while the resemblances add continually to its coherence.

His realities thus assume the form, not of a heterogeneous assemblage of observations, but of a systematized whole, the parts of which are mutually supporting. And we may say that his realities are substantiated by the convergent testimony of a great number of witnesses, the veracity of each one of which has been separately tried by every imaginable form of teasing and cross-questioning.

Now what have we, corresponding to this, for the substantiation of our belief in spirit as spirit? Can we, by following a method similar to the above, affix the stamp of absolute certainty to the affirmation that, when we think of the mind as a centre of

efficiency, as an originating, causative entity, we are *not* the victims of an illusion, but *are* standing face to face with the inmost reality of the world?

I maintain that we can, — that we can *prove* the reality of spirit as spirit by the collation and comparison of manifold experiences; by testing these in a great variety of relations, noting differences and resemblances; and by adhering to the result obtained when the constant uniform characteristics have been separated from the inconstant and occasional.

Our starting-point is the assumption that the subjective world is a real world, that self-consciousness discourses to us about real things. This is a rational assumption, — an hypothesis, the very statement of which carries an immense amount of conviction with it. It is the equivalent of the general assumption with which the physical realist begins his quest, — the assumption that the *external* world is a real world, a world that discourses to us of real things. Both of these assumptions are foregone conclusions to the common sense of the race. They seem to need no proof or verification; but, all the same, they admit of it, each within the domain of its own sphere. I say *within*, for this is an absolute condition of verification in the one case as in the other.

We are familiar with the claim, on the part of those who occupy themselves with the problems of the external world, that the investigation of these problems must be carried on with purely physical factors, — that the supposition of spiritual efficiency at any point invalidates the process. Just so, in the

study of the phenomena of self-consciousness, we demand absolute freedom within the subjective sphere. We deprecate the intrusion of any belief or principle that has been formulated in the exclusive observation of the relations of things to each other in the external world.

This is not the same as to say that we isolate ourselves, for the time, from all recognition of the outside world of things. For we have to consider the testimony of self-consciousness with regard to the reactions of the *ego* upon that world. But we do limit ourselves to the consideration of the inside subjective aspects of such reactions, just as the observer of natural processes limits himself to the outside, objective aspects of the same phenomena.

We have seen that illusions with regard to the things of the external world have their rise in hasty and therefore false judgments as to the range of their capabilities. A skillful imitation of a basket of fruit may lead us to infer in it the power of producing in us all those pleasurable sensations that are associated with the eating of fruit. We therefore said, *A thing of the external world is real when it is capable of fulfilling the promises it makes to us.* We may say the same with regard to the reports of self-consciousness. These are continually laying before us informations with regard to the states and capabilities of the *ego.*

I am daily asked to believe certain things about myself, about my ability or inability to accomplish this, that, and the other desirable task. Some of these reports are true, some are false. For instance,

when we see another exercising, apparently without effort, some acquired accomplishment, like public speaking, swimming, or horsemanship, we have to remind ourselves of the antecedent training, to overcome the illusion that we can at once do the same things without training. In the absence of experience, that which is done easily by another is reported by self-consciousness as easy for us. This is a veritable illusion as to the capabilities of the *ego*. It is a mirage-like picture of its possibilities that can give pleasure only so long as no attempt at verification is made.

Again, the *ego* is very prone to illusions with regard to the continuity of its own states. When under the influence of strong emotion, it seems to us as if the view of things presented to us while the emotion lasts would last forever.

If plunged in deep grief by the loss of a friend, it seems certain to us that gladness can never visit our hearts again. The aspect of everything that surrounds us is so changed, and the *ego* that looks out upon the world is a being so radically different from the one we remember, that a return to the former self seems impossible. So, in times of great religious fervor, the mind is so lifted above its ordinary mood as to believe itself permanently and forever superior to all the enticements of the world. These beliefs are in almost every case illusions. The *ego* is not the changed personality that it takes itself to be. It has neither lost nor gained so much as it seems at such times to have done.

We might enumerate many other sources and

kinds of subjective illusion, but this is enough for illustration's sake. We must go on to ask how we are to distinguish the true reports of consciousness with regard to the *ego* from the false. How else but by following the method that has proved so helpful with regard to the things of the outside world? That is, by subjecting to examination a great number of experiences, eliminating the inconstant, occasional elements, and classifying those which declare themselves to be invariable. In other words, we must sort the affirmations of self-consciousness, and put by themselves, as representing reality, those which are constantly and in a great variety of relations found to be true.

But what shall we say to the objection that *all* the reports of self-consciousness are invalidated by its deceitfulness in so many cases? Simply, that this assumption overlooks the fact that an illusion, without the existence of a corresponding reality, is an impossibility. As there can be no counterfeit coin except there be first a genuine one to imitate, so there can be no false pictures in the imagination the elements of which are not contributed by real, verified experiences. We affirm, then, that the *illusions* of self-consciousness must have their rise in the *realities* of self-consciousness. When, for instance, we have been deceived as to our ability to imitate the easily performed action of an expert, the deception is the outcome, not simply of the evidence before our eyes that another has accomplished it without apparent effort, but also of the certain knowledge that we have the ability to perform actions similar to the one

we have witnessed. We are not mistaken about the existence in us of powers of the same nature as those made use of by the expert. Our illusion, in other words, is a matter of details, not of essentials.

In the same way the *ego* may, with regard to some particular case, greatly exaggerate its own moral power and responsibility. It may, when most sorely restricted by a depressed state of the nervous system, through which it must operate, conceive that it is *able* to do and *ought* to do certain things that are impossible to it. But this illusion is the certain evidence of a reality lying behind it, the reality of the *power of moral choice*, a reality that has been verified in the oft-repeated normal experiences of the subject of the illusion. Again, our frequent errors with regard to the permanency of our emotional states are only mistaken inferences from the incontestable fact of personal identity.

But now, why do we call this an incontestable fact? I wish to draw special attention to this point. We may, if we will, say that our personal identity is an *ultimate datum of consciousness;* but if we do, let us not fail to recognize the fact that it is a datum not surrounded by any *special* mystery. It is a conviction that has grown up just in the same way that all our convictions about the reality of the things of the external world have grown up. It is the outcome of experience, — not of *one* experience, nor of the majority of experiences, but of all experiences. It is a factor in every conscious thought. It is the starting point of all reality.

I do not mean to deny that the presence of the

living, abiding, initiating *ego* is more conspicuous in some relations than it is in others. Our consciousness of self varies greatly, not only in degree, but also in the characteristics that are brought to light by different activities. It is a many-sided being, with greatly diversified powers of manifestation; and because it is so, we are able to apply to the study of it the same method that we pursue when investigating the nature of the things of the external world. We are able, by reflection, to compare, not simply the results reached by many reactions of a similar nature, but also those reached by many different classes of reactions, afforded by the very diverse relations which it sustains to the world.

Thus we should probably have no hesitation about referring our belief in the continuity of the *ego* to memory. Not to one act of memory, but to the aggregate of memories that extend back far into the past. Each conscious reaction of the *ego* is, from moment to moment, the certification to itself of its existence; and memory, by the registration of these, is the abiding certification of its continuity and identity. The testimony of this extended series of experiences, each one of which corroborates the others, affords in itself a very strong justification for our belief in ourselves as real, persistent beings; but the significance of it is greatly increased when we reflect upon the exceeding diversity of these experiences.

Each one, it is true, testifies in the same way to the *general* fact of the existence and continuity of the *ego;* but the aggregate of experiences may be

divided into a number of different classes, each one of which has its own separate and independent story to tell. For instance, one great class is made up of the reactions of the *ego* which arise from its contact with other minds. Every such conscious reaction is, as I have said, an evidence to the *ego* of its continued existence; but, in addition to this direct evidence, it receives, in the responses that come from others, a special and quite independent testimony to the truth of its home-made convictions. So accustomed are we to this corroboration of our identity that we should be filled with consternation were it suddenly withdrawn, — if, that is, we should all at once discover that, while continuing to react freely upon our friends, seeing them and hearing them speak, we were unable to elicit any reaction from them that showed recognition of our presence.

The same is true of the conviction that we are not mere links in a chain of mechanical sequences, but centres of originating power. This conviction may be called, as in the former case, an ultimate datum of consciousness; but it is also a datum that is vouched for by innumerable experiences, — experiences not all of one kind, but of a great variety of kinds that corroborate each other. It is impossible for us to doubt our power to modify our own mental states, because we are constantly using that power. By the voluntary concentration of the attention, we turn the current of our thought and energy now in this direction, and now in that.

But it is not alone in this direct way that our power of self-determination is known to us. We

have the strongest indirect evidence of it, — the evidence of contrast. It is a power that exists in degrees. Some men have very little of it; and those who have it are conscious of possessing it in greater force at one time than at another. Its opposite, the inability to resist a tendency or current of thought that is in possession of the mind, is an equally distinct experience. Our knowledge of defeat when we have made an unsuccessful attempt at self-determination is, in other words, an indirect but very convincing proof of the reality of the other experience with which memory connects it.

The illustration of this method might be extended indefinitely. But enough has been said to indicate the general course of our argument, — enough, perhaps, to make the reader suspect that our answer to the great question is to be a superficial one. It certainly has not the promise of profound wisdom that attaches to some other systems. It seems to ignore the efforts of the great masters of thought to penetrate by *analysis* to the unifying reality of the world. But it is not my purpose to ignore these systems. It will be the aim of the next two chapters to ascertain, as nearly as may be, the value of the answers they have given to our question.

CHAPTER II.

THE ANSWER OF SUBJECTIVE ANALYSIS.

I THINK we may take it for granted that every unsophisticated man is about equally certain of the truth of the following propositions: First, *I exist.* Second, *There exists in time and space a world external to myself.* Third, *I can produce changes in myself and in that external world.* Fourth, *Changes take place in me and in that world of which I am not the author.*

We may say, further, that the whole superstructure of man's ordinary belief rests upon these four assumptions, and that speculative beliefs vary accordingly as the emphasis of thought varies in relation to them. When they are all treated as equally true, and when the development from each is equally full, we have a philosophy which may, without shame, call itself the philosophy of common sense. The realities of such a philosophy are the realities upon which every one acts; they are the realities that have become established by the experience of generations of men in their every-day struggle for existence. The reverse of this is equally true. A philosophy that refuses belief to any one of these fundamental assumptions, or that develops one or more of them at the expense of the others, is removed thereby from

the sphere of common sense. The advocate of it has by some means obtained a view of the world that makes things appear to him in relations which are radically different from those that impress themselves upon ordinary minds.

This consideration, which can hardly be challenged, might seem in itself to afford a sufficient answer to the question, *What is reality?* Is not that which everybody considers real thereby *proved* to be real? Is not the long experience of the race decisive? And is not any philosophy that departs from the consensus of human experience in the long run, by that very departure condemned? These questions might be answered with an unconditional affirmative but for one thing, namely, the existence of the rational faculty in man. The mere circumstance that we are in the habit of regarding certain things as real, and that we find it convenient so to regard them, is not sufficient for this exacting faculty. Despising the test of practicability, reason urges upon us the necessity of being logical and consistent. The convictions of common realism, it seems to say, are good enough for the direction of the material life in which they have been formed, but they are not good enough to reason by. Perhaps they are not finalities, not the ultimate things of existence. It may be that they are only the realities of convenience.

This critical attitude may, at first sight, seem to be hypercritical. But it is not. For, immediately the light of reason is turned upon our common realism, it resolves itself into what seems to be an aggregate of heterogeneous convictions, — convictions that re-

fuse to justify themselves as a logical deduction from any single assumption regarded as the basis of reality. They cannot be connected by the word *therefore.* If we isolate them, they are individually unable to give an account of themselves. And, worse yet, their testimony is conflicting. The dogmatism of one, when followed to its conclusions, seems to contradict that of another; and if the self-conscious, critical reason accepts their dictation, it does this, not because it is logically convinced, but simply because it cannot get along without them.

Let us see how some of these contradictions are related to our four fundamental assumptions. The two propositions, "I exist," and "There exists a world external to myself," although united in experience, stand off from each other as soon as analysis touches them. The first, which we must regard as the very foundation of reality, seems to gather everything into itself. It refuses to be cognizant of, or in any way responsible for, the other. I am directly conscious of myself and of my own thoughts, it affirms, but of aught else it is impossible that I should know anything. I am conscious of a world of appearances, of phenomena, *apparently* external to myself, that are related in specific ways to me and to each other. But I have, and can have, no evidence whatever of their existence outside my own mind. As *ideas* they are real to me; but that they have any other kind of reality is a pure assumption. The whole notion of externality *may be* an illusion. This possibility tends to transform itself into a certainty when we go on to the third and fourth assump-

tions of common realism. For here we encounter another contradiction. The proposition, "I can produce changes in myself and in the world external to myself," directly affirms a kind of causation that is not only ignored, but is even pronounced to be impossible, by the development of the proposition, "Changes take place in me and in the external world of which I am not the author."

In the infancy of reason, no conflict between these two affirmations was apparent, because the uninstructed imagination had as yet conceived of no other kind of causation than that of which the mind was conscious in itself. It readily, therefore, explained all changes, not originated by itself, by a reference to other beings, more or less resembling self. But the increase of experience, and the habit of analyzing it, early compelled the recognition of that which we call physical causation. Science has classified and organized our knowledge of this. It has arrived at great generalizations which it calls laws of nature. These laws of nature, in their all-extensiveness, seem also to be all-comprehensive. And as all-comprehensive, they exclude the possibility of any such kind of causation as that which the third proposition affirms. The study of the external world, it is said, has established the fact that every event in it is fully accounted for by its physical antecedents; there cannot, therefore, be any such thing as spiritual or mental causation. The conviction that there is must be an illusion.

The replies that may be given to this from the standpoint of the first and third propositions need

not be considered here. It is sufficient for our present purpose to have briefly illustrated the fact of apparent contradiction between the different members of our common realism; and we may go on to consider whether philosophy is able to do anything toward extricating reason from this predicament.

Kant, who formulates four contradictions arising from our natural beliefs, introduces a statement of them in the following words: —

"Here a new phenomenon of human reason meets us, — a perfectly natural antithetic, which does not require to be sought for by subtle sophistry, but into which reason of itself unavoidably falls. It is thereby preserved, to be sure, from the slumber of a fancied conviction which a merely one-sided illusion produces. But it is at the same time compelled, on the one hand, to abandon itself to a despairing skepticism, or, on the other, to assume a dogmatic confidence and obstinate persistence in certain assertions without granting a fair hearing to the other side of the question. Either is the death of a sound philosophy."[1] If this were absolutely true, a continuance of our quest would be unnecessary. For if a legitimate use of the reason narrows us down to such a dilemma, has it not thereby demonstrated the uselessness of reason as a guide to reality?

Kant sought for an explanation of this recoil of reason upon itself, and believed that he found it in the assumption that all the phenomena with which the human mind deals are unreal. Behind the phenomena of the external world lurks the undiscovered

[1] *Critique of Pure Reason*, p. 255, Bohn's ed.

and undiscoverable thing-in-itself, the *real* thing, which is necessarily unlike anything that we know. And, again, behind the subjective phenomena of mind lies an equally unknown and unknowable thing-in-itself, which is also unlike any or all of the manifestations that it makes of itself. That these two unknowns may in reality be one is, for aught we know, possible, but not verifiable. The phenomena suggest to us a duality. Hence the contradictions of reason. Its deductions appear to be mutually destructive because we are never free from the false assumption that we are dealing with real things. Let us once recognize the fact that phenomena are only the appearances of things, — real as related to our minds, but as related to the absolutely real, illusions, — and we are no longer at a loss to account for the mockeries of reason.

This brings us to a satisfactory conclusion in *some* respects. It enables us to believe that things may be rational in themselves, that is, capable of being rationally apprehended by a mind that can know them as real. It also vindicates reason by shifting all the blame of its contrarieties on to the false appearances with which it is doomed to deal. But since human reason and reality are absolutely shut out from each other, we are left badly off by this explanation. The abstraction which we call the thing-in-itself and that other abstraction which we call our reason have been hypothetically saved at our expense, and we are forced to abandon ourselves to a "despairing skepticism."

It is just this fruit that the philosophy of Kant

has borne in those of his followers who have consistently held to the argument of the "Critique of the Pure Reason." The schools of Albert Lange and Schopenhauer were the direct outcome of it; and every kind of skepticism since Kant's day has referred itself to his demonstration of the unreality of phenomena. There is, it is true, another side to Kant. He did not intend that skepticism should be the fruit of his philosophy; and in view of his "Critique of the Practical Reason," we may believe Dr. Pfleiderer when he says that the task which Kant set before him was that of finding some means of reconciling the functions of the practical and the theoretical reason, which must be, in the last resort, one, — of reconciling, that is, that which is necessary and beneficent in practice with that which is theoretically true in knowledge.[1]

But so thorough had been the first, destructive part of Kant's work, so completely had he persuaded his followers that illusion and nothing but illusion constitutes the mental atmosphere in which we live and move and have our being, that little heed was given to his constructive work. It seemed like an after-thought, prompted by interest and not by philosophy. It was this view of the case that provoked Heine's bantering question, "Did Kant undertake this resuscitation, not merely on account of old Lampe (Kant's servant who needed a God), but also on account of the police? Or did he really act from conviction?"

Anyhow, the fragment of reality that Kant sought

[1] *The Philosophy of Religion*, vol. i. p. 178.

to rescue from the general ruin wrought by his criticism was not broad enough to inspire confidence. If everything *but* this was illusion, was not this illusion also? He might demonstrate a radical difference between the moral imperative and all other movements of the mind; but at the end of the argument, reflection infallibly returned to the consideration that this moral imperative manifests itself in the same mind that has already been proved to be the fountain-head of illusions. In short, Kant in his "Practical Reason" seems to be chargeable with that very dogmatism which, from the standpoint of pure reason, he declared to be the only alternative to a despairing skepticism and the death of a sound philosophy. Certain it is that his constructive followers, no less than the skeptical ones, refused to be satisfied with the ground of reality thus provided.

But none the less did this philosophy prove a great stimulus to system-building. One eminent thinker after another believed he saw the possibility of erecting, on the ground that Kant had cleared, a structure of positive thought that from its unity should be impregnable. It is not difficult to understand why this should have been the case. Aside from the natural reaction which a work of such wholesale demolition would produce, Kant's critique had laid bare novel aspects of thought which seemed capable of being turned from negative to positive uses. And, on the other hand, his doctrine of the unreality of phenomena was always at hand to banish to the limbo of illusions whatever could not be assimilated. How these constructive successors of the

great philosopher sought to obtain a broader basis for their philosophy, in the realm that he had abandoned to illusion, is the matter of special interest to us. How will they escape the choice of irrational dogmatism or hopeless skepticism?

Clearly there is no escape unless they repudiate altogether the underlying assumption of Kant's alternative, — the assumption that the propositions of common realism are equally self-consistent and equally well grounded in the necessities of thought. This in effect they do. They hold that the same analysis that has revealed the contrariety of the propositions puts us in a position to separate that which is true from that which is false. By it we may penetrate to an ultimate principle from which it is possible to build up an harmonious whole, excluding, as we go, all those unreal elements that have interwoven themselves in common thought.

This method, not only in the past, but also in contemporary thought, has given rise to imposing schemes for the determination and unification of the real. Whatever its defects may be, therefore, it is certain that it has had a great fascination for minds of constructive tendencies, and that it has been potent to inspire great thinkers with great dreams and great expectations. Nor is the assumption underlying these expectations peculiar to a particular class of minds. The belief, or rather the feeling, that analysis ought, in every instance, to enable us to separate the true from the false in our conceptions, that it ought to carry us down to a solid substratum of simple, pure reality, from which to rear the tem-

ple of truth without flaw, may be said to be universal. It is based upon so many analogies drawn from common experience that we accept it as a foregone conclusion. Let us see what kind of answers it has been able to furnish to our question.

A most significant fact confronts us at the very threshold of the history of the analytic method, namely, that its use for the discovery of the central point of philosophical development has divided its advocates into hostile factions, and that each of these factions has found in our common experience an unquestionably sure foundation to build upon. The complex faith by which we live, the moment we begin to question it, points out, as we have seen, two quite distinct sources of knowledge as its justification. Our knowledge of the external world of things is one of these; our knowledge of the internal subjective world of the *ego* is the other. And these two realms of experience stand facing each other in the imagination as rivals.

The champion of subjective reality takes his stand upon the directness and immediateness of our knowledge of mental states. He emphasizes that element of experience which says "I think," or "I exist thinking." The one thing of which we are at once and absolutely certain, he urges, is consciousness. Therefore it is by the analysis of conscious mental processes alone that we can hope to reach that point from which we may develop our knowledge as a consistent organic whole, and formulate a principle whose absoluteness will purge our common experience of every false element.

On the other hand, the philosopher who draws his ultimate reality from the external world of things appeals first of all to common sense. He denies the priority and directness of self-conscious knowledge. The results which it reaches are, he affirms, less direct and intuitive than those which dawn upon the opening mind of the child. They are far-fetched. They are reached only after a long, roundabout process; and the very length of this process casts suspicion upon them. When, therefore, they conflict with our knowledge of the external world, they must be set down as illusions.

I think we may say that Hegel on the one hand, and Herbert Spencer on the other, represent most definitely, at least for English thought, these divergent applications of the analytic method. A brief examination of the results reached by them will, therefore, give us some insight into what analysis and abstraction can do for us. Hegel was preceded by Fichte in an attempt to build up a constructive system on the basis of the Kantian criticism.[1] Fichte starts in with the assumption that no philosophy is worthy of the name that is not a true deduction from a single principle that represents reality. Philosophy, if it is to be philosophy at all, must be "in one piece." To find such a principle, he brushes away Kant's doctrine of the unknown thing-in-itself. The thing that we *know* is, for constructive thought, the thing-in-itself.

[1] In what follows with regard to Fichte and Hegel I have availed myself of the abstracts found in Professor Adamson's *Fichte*, in Professor Caird's *Hegel*, and in Professor Andrew Seth's particularly helpful book, *Hegelianism and Personality*.

There are, Fichte affirms, only two possible systems of philosophy, and between these we must choose. The one which he does not choose he calls *dogmatism*. It is that one which starts with the assumption of the independent reality of the things of the external world. Those who make this postulate deliver themselves over to the domination of mechanical conceptions. To them the determinations of the physical world are the all-in-all of reality. The inevitable result of this system, therefore, is to reduce mind to the level of matter. It becomes a thing among things, an accident of the world; and the belief in its free activity must be reckoned an illusion. The other system, the one which he chooses, he calls sometimes Criticism, sometimes Idealism.

The whole development of this is within the realm of the *ego*. Here all things have their origin and existence. The reasons for his choice of this system are its absoluteness and its comprehensiveness. The existence of the self-conscious *ego* is not, like the existence of things, a more or less probable hypothesis, but an ever-present fact of our own experience. It is the Absolute Thesis, the one undoubted reality of the world. Further, as a principle for philosophical development, it contains within itself all the elements of reality. The *ego* is not a mere fact that exists as the dogmatist conceives a "thing" to exist; it is existence and knowledge of existence in one. It is at the same time both subject and object. It is *for itself*. It looks on at its own existence; whereas the very notion of a *thing* is that it does not exist for itself, but only for another, — that is, for some intel-

ligence. "In intelligence, accordingly," says Fichte, "there is, if I may express myself metaphorically, a double series of being and looking on, of the real and the ideal. The thing, on the other hand, represents only a single or simple series, that of the real, — mere position or objective existence."[1] If, therefore, we start with the independent existence of the thing, there is no bridge by which we may pass to the idea of the conscious subject. We must, therefore, accept the *ego*, with its subjective and objective sides, as the ultimate, world-constituting fact.

Developing from this basis of reality, Fichte and Hegel built up, each in his own way, imposing worlds of thought, that within the limit of the subjective sphere had coherence and logical consistency. But our question with regard to their work must be, Have they by their idealism produced an harmonious whole that incorporates, without discord, *all* the elements of reality? Or have they simply traced out the relations of one side of our knowledge while turning their backs on the other? We have found Fichte condemning the physical realists or dogmatists, because their realities were isolated by an impassable gulf from the realities of the subjective world. Every attempt, he affirms, to bridge this chasm turns out to be "a few empty words which may, indeed, be learned by heart and repeated, but which have never conveyed a thought to any man, and never will."

Now does he, we at once ask, hold that the reverse process is any less impracticable? Can we cross

[1] *Hegelianism and Personality*, p. 43.

from ideas to things any easier than from things to ideas? On the contrary, having found a satisfactory basis for reality in the *ego*, he not only ignores the bridge but the chasm also. There is no chasm, because there is no other side. In the doubleness of the *ego* he has discovered both sides. There is no other world, and in this one there is no real, but only an apparent, lack of harmony. All the oppositions of thought contained in the ideas, mind and matter, necessity and freedom, have their origin in this duality of the *ego*, and within the realm of the *ego* they find also their reconciliation. They are seen to be only different aspects of the several stages in and through which the spiritual order is realized.

Hegel treats the problem differently. He is not satisfied, like Fichte, to leave his system in the air, unconnected with the facts of nature and history. These, he essays to show, are the outcome of ideas. That is, he believes himself able to cross that chasm which Fichte declared to be impassable to one taking his stand on the reality of things. Does he succeed? Or does his attempt turn out, as Fichte says every attempt to cross from things to ideas has turned out to be, only "a few empty words, which may, indeed, be learned by heart and repeated, but which have never conveyed a thought to any man, and never will"? Let us see what stuff his bridge is made of.

The Absolute Idea, according to Hegel, is, in the realm of thought or logic, the counterpart of Absolute Spirit in the realm of real existence. Before the Absolute Idea passes over into Absolute Spirit and nature, it is, we are told, "still logical, still con-

fined to the element of pure thoughts. . . . But inasmuch as the pure idea of knowledge is thus, so far, shut up in a species of subjectivity, it is impelled to remove this limitation; and thus the pure truth, the last result of the Logic, becomes also the beginning of another sphere and science." The Idea, in other words, by a determination of itself becomes *Nature*. But this determination of itself is not a process of becoming or of transition from stage to stage, as in the Logic. "The passing over," he says, "is rather to be understood thus, — that the idea freely lets itself go, being absolutely sure of itself and at rest in itself. On account of this freedom, the form of its determination is likewise absolutely free, — namely, the externality of space and time existing absolutely for itself without subjectivity." And again: "The Idea which exists for itself, looked at from the point of view of this unity with itself, is Perception; and the idea as it exists for perception is Nature. . . . The absolute freedom of the idea consists in this, that in the absolute truth of itself it *resolves* to let the element of its particularity — the immediate idea as its own reflection — go forth freely from itself as Nature." [1]

"What," asks Professor Seth, "are we to say of the deliberate attempt made in these passages to *deduce* Nature from the logical Idea? Simply, I think, that there is no real deduction in the case. The phrases used are metaphors which, in the circumstances, convey no meaning whatever. As Schelling afterwards said, they merely indicate a resolute

[1] *Hegelianism and Personality*, pp. 105, 106.

leap on Hegel's part across the ugly broad ditch which dialectic is powerless to bridge." [1]

But ineffectual as this effort must be deemed, it exhibits the advance that Hegel had made upon Fichte in his understanding of the true problem to be solved. Fichte, as we have seen, was contented to rest in his idealism. Philosophy, in his view, has no sphere outside the realm of the conscious *ego*. It cannot be applied to the problems of actual life. It and popular thinking move on different platforms; so that the gravest errors in speculation arise from the transference of considerations which are relevant in one of them into the other where they are absolute absurdities. "Life," as he puts it, "is non-philosophizing, and philosophy is non-living." His attitude to common realism is distinctly expressed in the following passage: "What arises through knowledge and out of knowledge is only a knowing. But all knowing is only representation or picture, and there always arises the demand for something which shall correspond to the picture. This demand no knowledge can satisfy. . . . But at least, the reality whose slave thou fearedst to be — the reality of an independent, sensible world — has vanished. For this whole sensible world arises only through knowledge, and is itself part of our knowledge. . . . This is the sole merit of which I boast in the system which we have but now discovered together. It destroys and annihilates error; truth it cannot give, because in itself it is absolutely empty." [2]

[1] *Hegelianism and Personality*, p. 107.
[2] *Ibid.*, p. 145.

This is a clear confession that his philosophy "in one piece" is nothing more than a fragment, and that the contradictions of common realism are not met and harmonized, but only evaded, when he substitutes for them the purely formal contradictions of the subject-object *ego*.

The reconciliations of Hegel are effected in the same manner. They all take place in the subjective sphere of formal thought. But he felt, as Fichte did not, the necessity of somehow including in his system the realities of actual life and nature. He held that his philosophy, even though it might not be altogether brought down to the plane of common sense, must at least "gain a clear conscience toward common sense by fulfilling all its reasonable demands, and leaving it no excuse to deny the rationality of that which transcended it. Especially, he declared, must such a philosophy be ready to meet on its own ground that higher kind of common sense called science; it must be scientific, even if it is necessary for it to be something more." [1]

This we hold to be the true statement of the case. But if Hegel was in advance of Fichte in his comprehension of the problem to be solved, Fichte had a truer insight into the limitations of the method employed. The chasm *is* as impassable from the one side as from the other. There is no real unification of the discordant elements of common realism possible by such a method; and as related to this problem we must say that neither of these great philosophers have escaped Kant's dilemma. They have

[1] *Hegel*, by Edward Caird, LL. D., p. 130.

refused skepticism, they have embraced dogmatism. Their systems are dogmatic, because they fail to justify their discrimination between the elements of common realism. The only possible proof that this discrimination was the result of a rational and not of an arbitrary choice lay in their ability to reincorporate all those elements that they provisionally neglected when selecting their single principle as a foundation. This they failed to do. The fragment which they abstracted from the concrete reality of experience remained a fragment. It led to no development other than that of putting together again the parts of this larger part after they had analyzed it.

And let us carefully observe here that the most real element with which they deal is not the final result of a prolonged analytic process. It is the part, still concrete, that they, at the very beginning of the process, have severed from the concrete whole.

This is acknowledged both by Fichte and by Hegel. The former thus describes what he regards as the solid ground of reality on which he builds: "There is something in me which impels to absolute, independent, self-originated activity. . . . I ascribe to myself the power of forming an idea or plan, and likewise the power, through a real action, of *embodying* this idea *beyond* the world of ideas. I ascribe to myself, in other words, a real active force, — a force which produces being, and which is quite different from the mere faculty of ideas. . . . Here lies the point to which the consciousness of all reality is attached. This point is the real activity of my idea, and the real power of action which I am

obliged, in consequence, to attribute to myself. However it may be with the reality of a sensible world external to me, I myself am real; I take hold on reality here." [1] Now this reality of Fichte is an exceedingly concrete reality. It is, so to speak, a solid block of experience quarried from actual life. It is, in substance, the first and second of our propositions of common realism. "I exist," Fichte says; and though he will have nothing to say about the reality of a sensible world external to himself, he does ascribe to himself the power of making plans and embodying them "beyond the world of ideas." This is no less than to affirm our second proposition, "I can produce changes in myself and in the external world."

It is the same with Hegel. The self-conscious knower is treated by him as the ultimate fact to which all other facts are relative, and in which they find their explanation. This is the point from which his analysis sets out; and it is also the point to which it returns, and beyond which it cannot get. As Professor Seth remarks: "He presents everything synthetically, though it must first have been got analytically, by an ordinary process of reflection upon the facts which are the common property of every thinker. . . . The very abstraction of 'Being' with which the method starts *is* the starting-point merely because it is the baldest abstraction that we can make from the complex fullness of actuality. . . . The forward movement (from this abstraction) is in reality a progress backwards: it is a

[1] *Hegelianism and Personality*, p. 146.

retracing of our steps to the world as we know it in the fullness of its real determinations."

All that the analysis does, therefore, is to disclose to us realities of a subordinate, inferior type; realities that are less and less comprehensive, more and more abstract. Hegel, in a measure, recognizes this. And the great merit of his system, to which we shall have occasion to recur, is its true classification of the categories of thought according to their worth; making the higher and more comprehensive the explanation of the lower and more extensive. That a contrary impression — the impression of a real development — has been produced by his imposing progress of the categories is owing, first, to the fact that he exhibits only the constructive side of his work, and second, to the glamour exerted over his own mind by the appearance of constructing something over and above that which was given in analysis. It was his ambition to furnish the world with an absolute, all-embracing philosophy. And this ambition carried him past the bounds of sober judgment.

Now let us sum up the net result of our inquiry thus far. It is purely negative. We have only reached this, — that no satisfactory answer to our question can be given by subjective analysis. All its promises of a reconciliation between the contradictory elements of common realism by reference to a single principle have turned out to be illusory. The results reached at the end of the process do not tally with the required results. They are not, in short, realities.

Common sense cannot, by any twisting or turning, divest itself of the fact of the independent and often *coercive* reality of the things of the external world. It divides the pictures of the mind into two classes that are absolutely different from each other. To the one class belong those that can, so to speak, be thought away, those that are subject to the control of the *ego*, that present no external obstacle to action. To the other class belong those that are not under the control of the *ego*, that cannot be thought away, that oppose obstacles to action. These two classes are as different from each other as light is different from darkness, as positive is different from negative, as a solid is different from a vacuum. But of these two classes the purely subjective philosophy makes one, by the simple process of dogmatically denying that there is any fundamental difference between the two. If, therefore, it is still permitted to hope that analysis can furnish the key for a rational and harmonious development of all our knowledge from a single principle, we must look elsewhere. We must turn to that other realm, — the realm of real things that science has made its own.

CHAPTER III.

THE ANSWER OF OBJECTIVE ANALYSIS.

A PHILOSOPHY that finds its ultimate reality in the things of the external world has a great advantage over any system of Idealism in that it is easily comprehended. It uses the word *real* in the ordinary sense to designate the things that we see and handle and contend with, — things whose reality is daily forced upon our attention by the necessities of conduct. The doctrines of idealism, on the other hand, seem to the man of affairs the purest moonshine, — the willful contradiction of the absolute certainties of common sense and experience. Simply as the antithesis of such a philosophy, therefore, physical realism finds favor; and by its frequent appeals to common sense easily produces the impression that it is never at war with it.

In addition to this, physical realism deals with the things that engage the attention of science, and ostensibly grounds itself on its demonstrations. Hence, all the prestige and halo of wonderful achievement that has gathered round the latter is reflected on the former; and there is thus secured for it a strong hold upon the imagination, a vantage-ground of enthusiasm, from whence it fairly browbeats criticism. For what can stand before that

science which, in the last two centuries, has made such conquests? Has it not proved itself the great revolutionizer? Has it not analyzed our finalities? reorganized our conceptions of the relations of things to each other? bound together our scattered fragments of knowledge by the discovery of principles of universal application? In short, has it not proved itself the organ of progressive understanding in every direction?

The inference drawn by the physical realist from these considerations is that the one and only road to knowledge is that which leads through the investigation of external phenomena; and that all other knowledge, being more or less mixed with illusion, is untrustworthy. Such knowledge may be true, but it must remain open to suspicion till rectified by the laws that science has discovered. Submitting to these laws we are safe, for they admit of proof. They can be demonstrated by numberless experiments. There is no variability, no uncertainty about their testimony. They say the same things to all men, and what they say to-day they will say to-morrow. When, therefore, these laws are shown to be the contradiction of any of our time-honored beliefs, there is only one course to be pursued. The ancient belief must abdicate, — it must take the path traveled, in these later days, by a host of shadowy forms that once lorded it over human reason.

But we must to our task. We have to discover whether this philosophy can give us a satisfactory answer to the main question, "What is Reality?" I have chosen the "Synthetic Philosophy" of Mr.

Herbert Spencer as the basis of our investigation, because it has seemed to me to be the most systematic and the most thoroughly reasoned of its class; and also because the real bearing of this widely read and much admired philosophy, as related to our higher beliefs, is often misapprehended by those who defend it. It is believed by some that, with a few slight alterations, it may be turned into a powerful defense of theism. But, if I am not greatly mistaken, it is, in its very essence, the contradiction of theism, — the substitution of a mechanical interpretation of the universe for a spiritual one.

Mr. Spencer's conception of the true philosophic method closely resembles that of the great idealist Fichte. The latter, as we have seen, held that philosophy, to be philosophy at all, must be *in one piece.* Its explanation must be a deduction of the apparently disparate elements of existence from *a single principle.* So also Mr. Spencer. He sets before him as the goal of his philosophizing the complete unification of our experience. He divides knowledge into three classes. "Knowledge of the lowest kind is *ununified* knowledge; science is *partially-unified* knowledge; philosophy is *completely-unified* knowledge. It is the final product of that process which begins with a mere colligation of crude observations, goes on establishing propositions that are broader and more separated from particular cases, and ends in universal propositions."[1] These universal propositions have to be traced back to *one* ultimate principle that underlies them all; a principle that, as coextensive

[1] *First Principles*, sec. 37.

with all experience, can be used for the reconcilement of all experience. This principle being found, the synthetic part of the philosophy consists in the deduction of all our knowledge from this one principle, and the demonstration of the congruity of all our justifiable beliefs with it and with each other.

Three primary truths of universal validity are said to have been established by science, "The *Indestructibility of Matter*, the *Continuity of Motion*, the *Persistence of Force*." [1] The last mentioned of these differs from the others in that it is *ultimate*, while they are *derivative*. This, the widest of all truths, is ultimate, because it can neither be merged in nor derived from any other. "The sole truth which transcends experience by underlying it is thus the *Persistence of Force*. This being the basis of experience must be the basis of any scientific organization of experiences. To this an ultimate analysis brings us down; and on this a rational synthesis must build up."

The reader will not fail to recognize the importance of the above assumption. If the doctrine of the persistence of force is "the *sole* truth that transcends experience by underlying it," if "asserting the persistence of force is asserting an *unconditioned* reality," if this reality is *ultimate* in the sense that all other beliefs can be referred to it as the touchstone of reality, if, in a word, it is all-*comprehensive* as well as all-extensive, then Mr. Spencer's philosophy

[1] "This phrase was introduced by Herbert Spencer to sum up all the laws of mechanics, especially the two principles of the permanence of matter and the conservation of energy." — *The Century Dictionary*.

stands. But to attain this result it is not sufficient to have established the truth and universality of the principle. It is not sufficient to have shown that the postulates upon which it rests are equally well grounded with those from which idealism takes its departure. In order to be accepted as the ultimate principle of our knowledge, the absolute test that can turn all other beliefs, no matter how deeply intrenched, summarily out of court, something more is required. It is necessary that its *superiority* of prerogative should be proved. Other realities, hitherto universally regarded as ultimate, cannot give way to this one unless the higher warrant is satisfactorily established.

Mr. Spencer at one stage of his argument recognizes this necessity, and resolutely engages the idealist with deadly intent. It is unnecessary to say that the result is a triumphant exhibition of his antagonist as a mildly insane person who, by a course of sophistical reasoning, has completely inverted the true order of knowledge. But it will be for us to inquire to what extent he has substantiated his own claim to a superior rationality. Before entering upon this, however, it will be useful for us to consider briefly the *results* to which the Synthetic Philosophy carries us, and the nature of the conflict between these results and the realities of subjective experience.

Mr. Spencer somewhere tells us that "there is no mode of establishing the validity of any belief, except that of showing its congruity with all other beliefs." By this he means all beliefs that in the final

adjudication are pronounced to be justifiable. But in the course of his unification he finds it necessary to prove that some of our most deeply rooted beliefs are nothing more than "inveterate illusions." This necessity of cutting off from the organized body of our conceptions elements that seem to be vital parts of it must be a painful one to a philosopher who has addressed himself to the task of developing all our experience from a single principle. These elements would certainly never be excluded if they could be retained. For a just appreciation of Mr. Spencer's work, therefore, we must give our attention to his demonstration of this necessity. It need not delay us long, for it admits of a simple statement.

The beliefs to be excluded may be summed up in the following single proposition: *Mental causation, as distinct from physical causation, is a reality.* This proposition is said to be false, because it is the contradiction of the ultimate test of all reality. To use Mr. Spencer's words, "The law of the persistence of force really amounts to this, that there cannot be an isolated force beginning and ending in nothing; but that any force manifested implies an equal antecedent force from which it is derived, and against which it is a reaction. Further, that the force so originating cannot disappear without result; but must expend itself in some other manifestation of force, which in being produced becomes its reaction; and so on continually." [1] This is the bare statement of the law. To make an intelligible ap-

[1] *First Principles*, sec. 59.

plication of it to the phenomena of ordinary experience, we have to fill out the conception with the law of the transformation and equivalence of forces.

What we seem to see in the world about us is a multiplicity of forces which have no community of nature. But science reveals to us the fact that these are all different forms of one persisting power. Heat, light, chemical affinity, electricity, magnetism, have been demonstrated to be different modes of motion; they are all convertible; and in many cases the precise amount of one which is equivalent to a precise amount of another has been accurately ascertained.

Further still, when we pass from the consideration of inorganic life to that of living forms, we find no break in this continuity of forces. The principle is, indeed, somewhat obscured by the complexity of the factors involved; but experiment almost, if not quite, demonstrates that all the physical activities of the most complex living beings are made up of links of that same chain that binds the inorganic world together. Nerve activity and muscular activity are only other names for chemical and physical processes. As Mr. Spencer puts it, "Those modes of the Unknowable which we call motion, heat, light, chemical affinity, etc., are alike transformable into each other, and into those modes of the Unknowable which we distinguish as sensation, emotion, thought; these, in their turns, being directly or indirectly retransformable into the original shapes." If, now, we add to this the consideration that the physical power of the universe, manifesting itself as force and energy, is

regarded by science as a store which never suffers diminution or increase, we have before us the data upon which the argument for the exclusion of mental causation from the category of real things is based.

Professor Bain has stated the case as follows: "It would be incompatible with everything we know of the cerebral action to suppose that the physical chain ends abruptly in a physical void, occupied by an immaterial substance, which immaterial substance, after working alone, imparts its results to the other edge of the physical break, and determines the active reponse, — two shores of the material, with an intervening ocean of the immaterial." [1] On the other hand, it is demonstrable that mental phenomena cannot be a result *outside* the physical chain. For if any portion of the stream of energy were diverted from its physical course for the production of mind, that portion would disappear, and the physical consequents would cease to be the equivalents of their physical antecedents. Eminent physicists have tried in a great variety of ways to evade the force of these considerations; but, turn which way they will, they seem still to be confronted by the dilemma which commands them to choose between science and common sense. Science apparently declares that intelligence and will cannot, as such, modify the physical course of events, — that there are, in fact, no such things as intelligence and will, distinct from physical changes.

Mr. Spencer does not hesitate to adopt this conclusion. There is, he tells us, but one underlying reality, one series of changes. But this one *real*

[1] *Mind and Body*, p. 131.

series manifests itself with two faces. The evidence that there is but one series of changes is massed in the following paragraph: "We have seen that the several circumstances which facilitate nervous action are also circumstances which facilitate or hinder feeling. We have seen that as nervous action occupies appreciable time, so feeling occupies appreciable time. We have seen that each feeling leaves a partial incapacity for a like feeling, as each nervous action leaves a partial incapacity for a like nervous action. We have seen that, other things equal, the intensities of feelings vary as the intensities of the correlative nervous actions. We have seen that the difference between direct and indirect nervous disturbances corresponds to the difference between the vivid feelings we call real and the faint feelings we call ideal. And we have seen that certain more special objective phenomena, which nervous actions present, have answering subjective phenomena in the forms of feeling we distinguish as desires."[1]

From this it appears that when the doctrine of the persistence of force, as applied to the phenomena of mind, is tested by the facts of subjective experience, the deduction that only one series of changes is possible is indorsed at every step by a farther induction. And this, together with many other considerations adduced by Mr. Spencer, "brings us," to use his own words, "to the true conclusion, — the conclusion that it is one and the same ultimate reality which is manifested to us subjectively and objectively. For while the nature of that which is mani-

[1] *Principles of Psychology*, sec. 51.

fested under either form proves to be inscrutable, the order of its manifestations throughout all mental phenomena proves to be the same as the order of its manifestations throughout all material phenomena." [1]

The reason why we find it so difficult to adjust our minds to this new conception of things is, we are told, because a false impression is continually produced by the process that we call volition. For instance, when a man performs a certain action after having been subject to an impulse consisting of a group of psychical states, he usually asserts that he *determined* to perform the action; and by speaking of his conscious self as having been something separate from the group of psychical states constituting the impulse, he is led into the error of supposing that it is not the impulse alone which determined the action. But this is an illusion, arising from the recondite nature and the extreme complication of the forces involved. "The composition of forces is so intricate, and from moment to moment so varied, that the effects are not calculable. These effects are, however, as conformable to law as the simplest reflex actions. The irregularity and apparent freedom are inevitable results of the complexity; and equally arise in the inorganic world under parallel conditions."

For example, "A body in space, subject to the attraction of a single other body, moves in a direction that can be accurately predicted. If subject to the attraction of two other bodies, its course is but approximately calculable. If subject to the attraction of three bodies, its course can be calculated with

[1] *Principles of Psychology*, sec. 273.

still less precision. And if it is surrounded by bodies of all sizes, at all distances, its motion will be apparently uninfluenced by any of them; it will move in some indefinable varying line that appears to be self-determined; it will *seem to be free.* Similarly in proportion as the cohesions of each psychical state to others becomes great in number and various in degree, the psychical changes will become incalculable and apparently subject to no law." [1]

This explanation Mr. Spencer offers as the probable source of the current illusion of self-determined action. But, he adds, the fact does not depend upon the explanation. Even though we were able to offer no conceivable reason for the existence of such an illusion, we should still be shut up to the acceptance of the fact that the notion of free will must be, and is, a delusive appearance. This is the summing up of the matter. "Psychical changes either conform to law, or they do not. If they do not conform to law, this work, in common with all works on the subject, is sheer nonsense; no science of psychology is possible. If they do conform to law, there cannot be any such thing as free will." [2]

These passages are sufficiently explicit; but they do not exhibit the full extent of the conflict between the Synthetic Philosophy and common realism. For when an attempt is made to interpret the whole world from the standpoint of the law of the persistence of force, it is not alone the doctrine of the freedom of the will that must be thrust out. We are

[1] *Principles of Psychology*, sec. 219.
[2] *Ibid.*, sec. 220.

equally called upon to bid a last farewell to every belief that rests upon the conception that mind is a distinctive reality. That which we have been in the habit of calling *purposive* in actions is as much a delusion as the belief in free will. True, a certain kind of reality is allowed to mind; it is said to be its inner face. But all the prerogative, all the efficiency of reality, has been made over to the outer face. The inner face is a pure nonentity that exerts no influence whatever upon results. Its reality is like that which the extreme idealist concedes to *things* when he says they "are ideas in the form of otherness."

It seems hardly necessary to spend more time on this part of our subject. The foregoing outline is sufficient to indicate the results reached by the Synthetic Philosophy, and the relation in which these results stand to the law from which they are a deduction. No one will care to dispute that the argument is logical and conclusive from that point where the doctrine of the persistence of force is admitted to be the ultimate and all-comprehensive reality of the world as known to us. But we have now to examine the grounds upon which such an admission can be justified. We have seen that the unification of knowledge by this law reduces to illusion the very foundations of the whole realm of subjective reality. We must, therefore, turn back to the primary assumptions from which the belief in the reality of each realm respectively takes its departure.

Our first inquiry shall be, How does the Synthetic Philosophy treat our four fundamental assumptions

of common sense or common realism? Those assumptions were said to be: First, *I exist.* Second, *There exists in time and space a world external to myself.* Third, *I can produce changes in myself and in the external world.* Fourth, *Changes take place in me, and in that world, of which I am not the author.*

The first words of Mr. Spencer with regard to the beliefs of every-day life are full of promise. They are as follows: "As we cannot isolate a single organ of a living body, and deal with it as though it had a life independent of the rest, so from the organized structure of our cognitions we cannot cut out *one*, and proceed as if it had survived the separation." And, again, he says: "The developed intelligence is framed upon certain organized and consolidated conceptions of which it cannot divest itself; and which it can no more stir without using than the body can stir without help of its limbs." This I have called *promising*, because it is exceedingly broad. It seems to be a pledge, in advance, that all the elements of our common realism are to be included and harmonized in the synthesis that is before us. The next step is still reassuring till we come to its last word.

In view of the above-mentioned solidarity of our ordinary cognitions, Mr. Spencer asks: "In what way is it possible for intelligence, striving after philosophy, to give any account of these conceptions, and to show either their validity or their invalidity? There is but one way. Those of them which are vital, or cannot be severed from the rest without mental dissolution, must be assumed as true *provi-*

sionally."[1] This last word indicates, by its limitation, the course that has been chosen. Mr. Spencer is not to show how *all* the necessary elements of thought of which the developed intelligence cannot divest itself may be unified. But he is to demonstrate that certain of these elements are true and others false. His synthesis is to be developed from a single principle, and this principle is reached by precisely the same method that Fichte and Hegel employed when they sought to escape Kant's dilemma of *skepticism or dogmatism.*

They avoided Kant's conclusion by denying his underlying assumption, namely, the assumption that all the postulates of common realism have *equally* valid and necessary grounds, and that we can discover in no one of them any decided superiority. Mr. Spencer does the same. The only difference being that he discriminates in favor of that member of our organized cognitions that the German philosophers discriminated against, and develops his whole system from it. We have seen how they justified their choice of the *conscious ego* as the measure of all reality. We have now to see how Mr. Spencer defends his choice of the phenomena of the external world as the touchstone of his system.

In a *general* way, the possibility of discriminating between the rival claims of the elements of common realism is argued after this fashion. Man is the product of a process of evolution, in the course of which he has formed many false conceptions. Even the simplest of his impressions of the world are com-

[1] *First Principles*, sec. 39.

posite things. They are the unconscious inferences of the mind responding automatically to external stimuli. They therefore partake of the imperfection of the partially evolved organ or complex of organs. But, all imperfect as they are, they appear to the child-man as finalities and, later, become woven into the more highly elaborated ideas that form themselves from them. During long ages of human experience there is little or no disturbance of these original conceptions. The whole structure of thought, therefore, has time to become thoroughly organized and permanently established as a system of convictions and modes of thinking. They constitute, in fact, an acquired nature of the mind.

But the mind, or rather the complex of physical sequences which we *call* mind, has the power of self-reconstruction. At a certain point in evolution the critical faculty is developed. The grounds of belief are examined and analyzed; and we have metaphysics. But no progress is made by means of this instrument of analysis. For the mind cannot get out of its self-woven net. It cannot get beyond those unconscious inferences of simple perception which contain the seeds of all its contradictions. So long as it works only with the materials which these have furnished, there is no escape from its errors. It returns continually to the point from whence it set out. It is forever the victim of its own definitions. Then, at a later stage, arises science. And through science the critical faculty is at last put in possession of instruments by the use of which it can make good its escape from the hopeless labyrinths of metaphysics, and also build up a true synthesis.

These instruments are *rectified simple perceptions*. It is with these that science begins the work all over again, and lays for our knowledge of the world an entirely new and trustworthy foundation. By its patient comparison of carefully verified facts it is able to cancel errors, and to furnish the mind with true data for the construction of a reliable and consistent philosophy. That this philosophy should meet with great opposition is not only natural but necessary; for it has to effect a complete reorganization of human thought, and can prevail only by fighting its way through all the cobwebs and rubbish that have accumulated in the lapse of centuries.

Thus far in general. Now, more particularly. Mr. Spencer calls our attention to the fact that the analysis of our experimentally organized cognitions discloses two orders of manifestations. These two form heterogeneous streams in the mind, which run along, side by side; "each now broadening and now narrowing, each now threatening to obliterate its neighbor, and now in turn threatened with obliteration, but neither ever quite excluding the other from their common channel." These two classes of manifestations may be called, respectively, *impressions* and *ideas*. But the use of these words is deprecated, because of the misapprehensions that are likely to attach to them. An essential distinction between the two streams may be expressed by the words *vivid* and *faint;* and it is also important to notice that manifestations of the vivid order are original and those of the other order are copies. The first are those which depend for their existence upon

sensible contact with the external world; the others are those which may detach themselves from the first and maintain a quasi independence. In short, these two classes or streams correspond respectively to the two worlds of thought known to philosophy as the worlds of the *object* and *subject*, of the *non-ego* and the *ego*, of the *not-self* and the *self*. They present themselves to us "as antithetically-opposed divisions of the entire assemblage of manifestations of the unknowable."

Mr. Spencer is to prove to us that a true philosophy must find its ultimate principle of reality in the world of the *not-self*. His whole system hangs upon his ability to do this. For, failing to prove the superior claims of the phenomena of the external world to represent reality, he falls a victim to one of the horns of Kant's dilemma; and his philosophy is condemned, as one that is built upon "a dogmatic confidence and obstinate persistence in certain assertions, without granting a fair hearing to the other side of the question."

The line of his defense is foreshadowed in the characteristics of the two streams of manifestation already adverted to. The world of the *not-self*, because its manifestations are vivid and original, takes precedence, in the matter of reality, of the internal world of the *self*, the manifestations of which are faint and derived. In the "Principles of Psychology" this argument appears under three heads: "The argument from *distinctness*," "The argument from *priority*," "The argument from *simplicity*."

We will examine these in the above order. First,

as regards distinctness. The illustrations given by Mr. Spencer to prove that vivid representations are more reliable than faint ones are most convincing as far as they go, but they do not go far. They have to do only with the different *modes* of *one* class of experiences. They have, therefore, no applicability whatever when we are comparing the relative validity of *different classes* of experiences. We are reminded by a multiplicity of illustrations that a presentation of memory is less distinct than a presentation of immediate perception; and that because of this we place less dependence upon it. We are in the constant habit of rectifying the former by the latter. Not to accept the evidence of sight, hearing, and touch, when they contradict memory, is simple madness.

But how does this affect the problem under discussion? The realities of the idealist are not the faint presentations of memory. They are the vivid presentations of self-consciousness. These form a class of experiences by themselves. They are absolutely unique, and not to be directly compared as to vividness with any other class of impressions, simply because they have no principle of likeness to them. Within the class they also may be divided into vivid and faint. A remembered consciousness of self is fainter and less reliable than an immediate, present consciousness of self.

But we are not just now concerned as to these distinctions within the class. The great conflict is between the different classes of manifestations, between those of the subjective and those of the objective

world. If there is a question of vivid and faint between these, our only answer, an indirect one, is to be found in the realm of conduct. We must assume that the more vivid are those that prevail in conduct, the less vivid are those that are overcome. And by this test we are only told that sometimes the one and sometimes the other is the more vivid. With the animals below man the presentations from the external world are all powerful. But with man the idea of self as moral or immoral, as noble or base, is often far more powerful, and presumably more vivid, than the presentations that come through the senses from the external world. All successful resistance to the allurements of sense in favor of a moral ideal is proof that subjective presentations are at times more vivid than the opposing objective ones.

We come next to the argument from priority. In opposition to the assumption of the idealist that we are *primarily* conscious only of our sensations, Mr. Spencer affirms that "the thing primarily known is not that a sensation has been experienced, but that there exists an outer object. . . . The existence of a sensation is an *hypothesis* that cannot be framed until external existence is known."[1] For the support of this affirmation he refers us to the mental biography of a child or the developed conception of things held in common by the savage and the rustic. He pins even the idealist to this priority by an *argumentum ad hominem*, admonishing him that he cannot fail to remember that originally even he regarded colors as inherent in the substances distinguished by

[1] *Psychology*, sec. 404.

them, that sweetness was conceived as an intrinsic property of sugar, that hardness and softness were supposed actually to dwell in stones and in flesh. Remembering all this, the philosopher cannot fail to admit that the idealistic hypothesis was long subsequent to the realistic belief, and that it was only after a considerable amount of practice in throwing intellectual somersets that he succeeded in inverting his original conception.

That this is a true statement of the historical order of our conceptions no one can doubt. The belief in the reality of the outward world of sense is a primary, unreasoned belief. But the mere fact that it is first in order of development does not stamp this belief with any peculiar claim to reality or truth as against subsequent opposing developments. On the contrary, in view of the hypothesis of evolution, this priority of the realistic conception is against its acceptance as a final deliverance of reason. It might, indeed, be turned into a powerful argument by the idealist, on the ground that the latest, most highly evolved products of the human mind should always, other things being equal, be regarded as the nearest to reality. But to find this use made of priority we need not turn to the opposite camp. Mr. Spencer himself has, as we have seen, constructed his whole system upon this assumption. The Synthetic Philosophy is commended to us as the reconstruction of our traditional beliefs by science, — the purification of current modes of thought, based upon misconceptions inherited from the crude infancy of the race, by the latest and most highly elaborated

interpretation of things. The reader is constantly reminded of this by Mr. Spencer, but, for example's sake, I will cite a few passages from his First Principles.

Three fundamental facts of the world, as we have seen, are said to be the "Indestructibility of Matter," the "Continuity of Motion," the "Persistence of Force." They are truths of the highest order of certainty, before which all conflicting truths must succumb. But these, let us observe, are none of them truths which commend themselves to the undeveloped mind of the savage, the rustic, or the child.

As regards the Indestructibility of Matter, Mr. Spencer says, "So far from being admitted as a self-evident truth, this would, in primitive times, have been rejected as a self-evident error. There was once universally current a notion that things could vanish into absolute nothing, or arise out of absolute nothing. . . . The gradual accumulation of experiences, however, and still more, the organization of experiences, has tended slowly to reverse this conviction, until now the doctrine that matter is indestructible has become a commonplace." [1] Nay, even more than this is true. It has in the course of mental evolution become not only a commonplace, but "a necessary truth," — a truth "the negation of which is inconceivable." "There are necessary truths in Physics," we are told, "for the apprehension of which a developed intelligence is required; and before such intelligence arises, not only may there be failure to apprehend the necessity of them, but there may be vague beliefs in their contraries."

[1] *First Principles*, sec. 52.

Let us observe here that the *vague* belief is said to be that which springs up at first hand from immediate contact with nature; and farther on we read: "When, during mental evolution, the vague ideas arising in a nervous structure imperfectly organized are replaced by the clear ideas arising in a definite nervous structure, this definite structure, moulded by experience into correspondence with external phenomena, makes necessary in thought the relations answering to absolute uniformities in things. Hence, among others, the conception of the indestructibility of matter."[1]

It is needless for us to dwell longer on *priority* as a test of reality or truth; let us go on to the third criterion, the argument from *simplicity*.

This is briefly stated in the following words: "The consciousness in which Realism rests is reached by a *single* inferential act, while the consciousness professed to be reached by Idealism is reached by a *series* of inferential acts."[2] The same idea is more elaborately stated thus: "If we compare the mental process which yields Realism with the mental process said to yield Idealism or Skepticism, we see that apart from other differences the two differ immensely in their lengths. The one is so simple and direct as to appear, at first sight, undecomposable; while the other, long, involved, and indirect, is not simply decomposable, but requires much ingenuity to compose it. Ought we then to hold that in the short and simple process there is less

[1] *First Principles*, sec. 53.

[2] *Principles of Psychology*, sec. 413.

danger of going wrong than in the long and elaborate process; or ought we to hold with the metaphysician that in the long and elaborate process we shall not go wrong, though we go wrong in the short one?" [1]

To choose the latter alternative is, Mr. Spencer affirms, logically equivalent to accepting the following "eminently insane" propositions. "A bullet fired at a target a hundred yards off may miss it, but if fired at the same target a thousand yards off the probability of missing it is much less. In walking over a frozen lake a quarter of a mile wide you are not unlikely to slip down; but if the frozen lake is a mile wide there is but little probability that you will slip down in walking over it." [2] This certainly seems to prove the Idealist to be an absolutely irrational creature. But before accepting it as the last word in the matter, we must reflect that Idealism can make just as strong a use of this argument against the highly elaborated generalizations of science.

The doctrines of the "Indestructibility of Matter" and of the "Persistence of Force" appeal to the subjective philosopher as the long processes that it has required much ingenuity to construct, as opposed to the apparently *immediate* deliverances of consciousness. Such a deliverance, for example, as the proposition — *I exist and originate changes in the world.* The simple fact is that Physical Realism and Idealism have each their long, and each their

[1] *Principles of Psychology*, sec. 407.
[2] *Ibid.*, sec. 407.

short processes; and that whenever we contrast the long process of the one with the short process of the other we are confronted with the necessity of accepting the short one as against the long one. That is, we are shut up to this necessity if we hold with the dogmatist of either side that the one must be false if the other is true.

How absolutely subversive of Mr. Spencer's claims this argument from simplicity is, will be seen when we apply it to the main question with regard to causation. The proposition denied by physical realism is an exceedingly simple one, derived by a single inferential act from experience. That proposition is — *Mental causation as distinct from physical causation is a reality.* The immediateness, universality, and persistence of this belief are demonstrated by all our language and by all our conduct. Every plan formed for the determination of future action is an expression of it; and the carrying out of every such plan is to the unsophisticated mind a new proof of it. So early is this belief developed, and so deeply is it rooted, that no amount of culture avails to eradicate it. And, on the other hand, as the author of the "Synthetic Philosophy" himself tells us, the true idea of causation is one of the very latest to be developed because it involves such extremely elaborate processes. "Even the simplest notion of cause," he says, "as we understand it, can be reached only after many like instances have been grouped into a single generalization; and through all ascending steps, higher notions of causation imply wider notions of generality."

So difficult, indeed, is the attainment of this conception of cause that men of the highest culture are frequently found to be quite ignorant of it. "On studying the various ethical theories," Mr. Spencer affirms, "I am struck with the fact that they are all characterized either by entire absence of the idea of causation, or by inadequate presence of it." Nor is even this the most extreme exemplification of the far-awayness from ordinary thinking of this highest peak of generalization. "Deficient belief in causation is, indeed, exemplified even in those whose discipline has been specially fitted to generate this belief — even in men of science." [1] Now, let us ask, what becomes of this elaborate idea of causation on the principle of discarding the long process and accepting the short one?

We may seem to have dwelt too long on this point already; but we must make one more application of it. After his development of the triple argument from distinctness, priority, and simplicity, Mr. Spencer still affirms the necessity of a more definite and absolute criterion for the determination of reality. This he finds in the following proposition, which he calls the "universal postulate" — "*An abortive attempt to conceive the negation of a proposition shows that the cognition expressed is one that we are compelled to accept.*" [2] The radical impossibility of using such a test as this for the explication of the problems of the external world will be shown at a later stage of the discussion. For the present I

[1] *Data of Ethics*, sec. 17.

[2] *Principles of Psychology*, sec. 433.

wish only to apply, to the test itself, the principle of the long and the short process. In explanation of his universal postulate, Mr. Spencer hastens to say that "some propositions have been wrongly accepted as true, because their negations were *supposed* inconceivable when they were not."

This obstacle to the application of the absolute test must at once suggest itself with a good deal of force to every one who is not as yet convinced that the law of the persistence of force is "the sole truth which transcends experience by underlying it." To such an one, it may appear to be more impossible to conceive the negative of some of the truths that this law contradicts; and if so, he must believe his mental condition to be as abnormal as the physical condition of a man who sees motes floating before his eyes when there are no motes in the atmosphere. But how is he to clarify his vision?

There is but one way: he must, as we have already been told, enter upon a long and very elaborate process of mental purgation, at the end of which he may hope to discover that his original impossibilities, the results of single inferential acts from experience, are no impossibilities at all. For instance, he may come to see clearly that the negative of the proposition, *Mental causation is a distinct reality*, is not at all inconceivable. But he must be prepared to bear with equanimity the gibes of the idealist, who, backed by the common sense of the world, reminds him "that only after a considerable amount of practice in throwing intellectual somersets did he succeed in inverting his original conception."

We have now again reached the point of summing up; and again we have to acknowledge that we have reached only negative results. We have only shown what reality is not. At the outset of our discussion we confronted Kant's discouraging affirmation that when we employ our reason on the fundamental postulates of the understanding, derived from experience, there arises a natural antithesis, embodied in certain sophistical propositions or theorems, which have the following peculiarities: "Each is in itself not only self-consistent, but possesses conditions of its necessity in the very nature of reason — only that, unluckily, there exist just as valid and necessary grounds for maintaining the contrary proposition." On the strength of this, we found the same philosopher further affirming that reason is consequently "compelled, either on the one hand to abandon itself to a despairing skepticism, or on the other to assume a dogmatic confidence and obstinate persistence in certain assertions without granting a fair hearing to the other side of the question."

We have seen how two classes of philosophers have sought to avoid this dilemma by affirming, in opposition to Kant, that reason *is* able to discriminate between the rival propositions offered to it by experience; and that analysis *is* capable of putting us in possesssion of an ultimate principle which may be regarded as an unconditioned reality. We have examined briefly the methods and results of these philosophers, and have seen reason to pronounce them wholly inconclusive and unwarrantable. Each of the systems developed by them from a single principle pro-

fesses to be a complete unification and purification of our knowledge. But the unification proves to be only the unification of a fragment arbitrarily torn from the organized body of common realism; and the purification proves to be the equally arbitrary exclusion from reality of a part of our knowledge that is just as vital as the part retained. The reasonings of each in so far as they are positive, that is, directed to the proof of the reality of the part chosen, are unassailable; but, on the other hand, they are equally good for establishing the reality of the rejected part. So also, in each case, the reasoning that is applied to the demolition of the assumed non-reality is no less destructive to the assumed reality.

Having reached this result, — having shown the impossibility of restricting the idea of reality either to the subjective or to the objective interpretation, we may go on to a positive discussion of the problem. And in the next chapter the reader may look for a direct answer to the main question.

Before leaving this aspect of the subject, however, I wish to prepare the way by pointing out what my course will be with regard to Kant's dilemma. There seems to me to be a flaw in the statement which he makes of the case. The complete antithesis to a universal skepticism is not, as he implies, the dogmatic affirmation of one side of reality and the denial of the other side. For this is neither wholly dogmatism nor wholly skepticism, but a mingling of the two. Fichte and Spencer are each dogmatic as to one half of reality and skeptical as to the other half. The true antithesis to a skepticism with regard to the

whole is that which I have elsewhere called a dogmatism with regard to the whole; and our criticism of the intermediate position leaves us free to reconstruct the dilemma as follows. We must either reject *all* the fundamental propositions of common realism, which is *universal skepticism;* or, on the other hand, we must accept them *all*, which is impartial dogmatism.

The acceptance of the former alternative, Kant says, "might perhaps deserve the title of the Euthanasia of pure reason." The acceptance of the latter he brands as "mere mysology reduced to principles." Of this last also Fichte would have said that it is no philosophy at all; and Mr. Spencer refers to it as "that position, apparently satisfactory to some, in which are entertained two mutually-destructive beliefs." This is, however, the alternative that I accept; and in what follows I shall try to defend this choice, not only as one that affords the sole possible basis for an affirmative philosophy, but also as one that is eminently rational and self-consistent.

CHAPTER IV.

THE ANSWER OF LIFE.

At the close of the last chapter, the reader was promised a direct answer to our main question. Risking abruptness, therefore, I will proceed at once to submit a test of reality. It is as follows: *The necessity of* LIVING *the affirmation of a proposition shows that this proposition expresses a reality.* For the sake of antithesis, I have ventured to frame my statement somewhat after the fashion of Mr. Spencer's universal postulate. That postulate, said to be the ultimate criterion of truth, is: "An abortive attempt to *conceive* the negation of a proposition shows that the cognition expressed is one we are compelled to accept." We have already seen the impracticability of this test as applied to the world of concrete experiences. But it is necessary, at this point in the discussion, to clearly understand *why* it is impracticable.

Mr. Spencer's mistake is in attempting to apply a criterion that is valid within a limited sphere to the whole realm of truth. There is no universal test of truth, for the simple reason that all truth is not of the same kind. On the one hand, there is the truth that expresses the relations between pure abstractions; and, on the other hand, there is the truth that

expresses the relations between the concrete realities of life.

When we are dealing with the former, the test of the non-conceivability of the opposite may be legitimately applied, because we are here concerned solely with concepts. We have marked off for ourselves a particular sphere of thought by means of definitions and postulates, and within this sphere our knowledge is absolute and complete. It is, so to speak, inclosed within walls, so that there is a perfect rebound for every proposition. We have absolute agreements and disagreements, because we ourselves have made the absolute definitions to which every statement is referred. And the inability to conceive the negation of a proposition demonstrates its truth, simply because such a negation contradicts the definitions of the terms in which the proposition is stated.

But when, on the other hand, we are dealing with the concrete realities of life, we are quite outside the realm of absolute agreements and contradictions. Our knowledge of the elements with which we have to do is in no sense complete. They have relations altogether unknown to us, and the progress of knowledge is continually bringing with the range of conceivability combinations that were once unthinkable. Moreover, the relations that *are* known are so differently apprehended as to make any consensus, on the ground of conceivability, impossible. The specialization of knowledge does not tend to draw men of cultivation into such a consensus. On the contrary, it separates individuals and groups, and makes the theoretical inconceivabilities of one group the theoretical

conceivabilities of another. To find a ground of agreement, therefore, we must retrace our steps from the widely extended frontiers of theoretical knowledge to that common experience that binds all classes of minds together.

This course commends itself to us, not simply as the sole practicable one, but also as the only rational one. For in referring the question of the truth of concrete existence and agencies back to life, we refer them to the sources whence our belief in them has sprung. And just as we found it legitimate to test the statements of an abstract science by an appeal to *conceivability*, because the whole structure of thought in such a science rests upon *concepts*, so we affirm the legitimate and necessary test of statements about the realities of life to be an appeal to *life* in which they have originated.

But this account of the origin of our fundamental beliefs may be challenged. On what ground do we say that they have originated in life or experience, rather than in the nature of the mind itself? I would reply that the former statement is not the denial of the latter; it is only a more complete expression of the facts. The nature of the mind is not something that has been created outside of experience. It has been developed and made what it is in connection with experience, — not simply the experience of the individual, but also that of the race, handed on from one generation to another.

The process by which our convictions with regard to the reality of things have come to be what they are may be studied to advantage in the developing

mind of a child. Every infant has to find out for himself that there are solid things that he cannot walk through, forceful things that he must avoid to escape injury. In short, by an unending series of encounters with the external world he learns to respect it, and to govern himself with reference to agencies that rigidly hold their own. At the same time, he learns his own powers. In his conflicts with things, the growing boy discovers that, within certain limits, he can become their master. If a solid thing is not too heavy, he can remove it. Though he cannot crack a nut with his hands or with his teeth, he learns that he can attain his object by compelling a stone to assist him. The most real things of the world to him are the things that can do something. To his thinking the atmosphere is nothing because he discovers no resistance from it. But the wind is decidedly something because it can blow his hat off; and *he* also is something because he can run after it and put it on again.

It is the same with the mature man. He continually increases the range of his knowledge of real things, and of their relations, by experimenting; and though he can greatly assist himself in this by the use of analogies, it is to experience that he must always come back for the verification of his analogically conceived hypotheses.

A little reflection will convince us that the tenacity with which we hold to the belief in the reality of *things*, as against the skeptical argument of the idealist, and to the reality of *mind* as against the skepticism of the physical realist, is a tenacity not

born of argument. For if it were born of reasoning, it would also succumb to reasoning; and we have already seen that the destructive argument is just as good as the constructive. Kant states only the truth when he says: "If any one could free himself entirely from all considerations of interest, and weigh without partiality the assertions of reason, attending only to their content irrespective of the consequences which follow them, he would live in a state of continual hesitation. To-day he would feel convinced that the human will is free; to-morrow, considering the indissoluble chain of nature, he would look on freedom as a mere illusion, and declare *nature* to be all-in-all. But if he were called to action, the play of the merely speculative reason would disappear like the shapes of a dream, and practical interest would dictate his choice of principles." [1]

As matter of fact, we do continually obey the dictation of the practical interests of life; and in so doing, we recognize an authority more forceful, more arbitrary, than that of reason. This same authority, and no other, it is that, in the face of all skeptical objections, holds us faithful to the postulates of common realism. For however closely beset with reasons for denying one of these postulates, we know, even in the very moment of our faltering, that if, for the sake of argument, we pronounce it to be unreal, we shall presently be compelled to dishonor our words by our acts. Let us observe, further, that the *degree* of our conviction with regard to the reality of anything is measured by the extent to which it enters into life.

[1] *Critique of Pure Reason*, p. 9°2, Bohn's ed.

It has probably already occurred to the reader that our test of reality is one that admits only of a restricted application. As to the reality of some things it will give only an uncertain answer, and as to the reality of others it will give no answer at all. But we are not looking for a universally applicable test, but only for one that is true in so far as it is applicable. If we can get a foundation for reality, a few ultimate data, it is all we ask.

We have compressed our statement of reality into four propositions, which we assumed to be universally held by unsophisticated men.[1] And if now we inquire *why* there is universal assent to these particular propositions, I think we must acknowledge that it is because all men are obliged daily to *live* the affirmation of them. The truth of this may not be equally apparent with regard to all four of our postulates; and for the sake of making sure that it is as true of one as of another, it may be worth while to examine the grounds on which the assumption is based. To simplify the matter we may reduce our four propositions to two, as follows: —

First, *The external world, known to us through our senses, is a world of real agencies that act and react upon us.* Second, *The human mind is a real originating cause, which to some extent modifies and directs itself and external agencies.*

[1] These propositions are as follows: *First*, I exist. *Second*, There exists, in time and space, a world external to myself. *Third*, I can produce changes in myself and in the external world. *Fourth*, Changes take place in me, and in that world, of which I am not the author.

It might, at first sight, seem sufficiently clear that daily life involves the necessity of living the affirmation of both these propositions. But there is this difference between them: when the necessity of living the latter is called in question, the reaffirmation of it is less decisive and absolute than it is in the case of the former. It is more clearly seen that the former abuts, so to speak, on substantial, permanent things. The latter seeks first its verification in a complex process which presents a more yielding front to skepticism. When, for instance, a philosopher, in denial of the reality of the external world, proves satisfactorily to himself that a precipice has no existence except as a subjective phenomenon, the possibility or impossibility of living his denial may be quickly demonstrated by ascending to the roof of his house and walking off into space. But when the physical realist denies the distinctive reality of mental causation, we do not so quickly bring matters to a *reductio ad absurdum*.

As the agency in question is a subjective one, we are easily drawn into the analysis of self-consciousness for the determination of the controversy. We are told that effects *apparently* produced through the agency of mind are *in reality* produced by purely physical causes, — causes that are lost to consciousness because of their complexity. And in the dazed contemplation of this complexity we ourselves get lost. The wielder of physical necessity fixes us with his eye and holds us as with a spell. He bewitches our judgment with the tale of transformations so manifold and intricate that any impossibility is

made to seem possible. But under this spell we need not remain. The appeal to experience is just as open to us for the decision of this question as for the demonstration of the reality of the things of the external world; and the answer it will give is just as decisive. Let us see just what it is that we affirm, and what it is also that the physical realist denies.

The belief that the mind has a unique power of influencing the course of events is often so stated as to constitute a palpable absurdity. When, for instance, the will is said to be absolutely untrammeled, the deliverances of experience are disregarded as much as when its freedom is altogether denied. What life really testifies is that the soul has the power of modifying both itself and external events *to some extent.* Unconscious habit and routine, in response to a proximately uniform environment, constitute the largest part of every man's life; and it is only when we come to that smaller part, where routine is interrupted, that we recognize ourselves as free, intelligent agents. Much of that which is now almost mechanical had, without doubt, its origin in that which was conscious and deliberate. Conscious self-determination first constructed much of the machinery that has subsequently run almost without consciousness. But, so far as current experience is concerned, it is only in a small part of life that we are actively engaged in modifying, with set purpose and by a purely spiritual agency, ourselves and the course of events.

Now, the position of the physical realist involves the unconditional denial of purposive or spiritual

modification in any part of life. There can be no half way about it. It is not unfrequently the case that those who deny the freedom of the will, in deference to the mechanical view of things, seek to evade the consequences of their denial when they confront the problem of moral responsibility. The will is held to be powerless to withstand the impulses that urge to immediate action, but at the same time it is said that men are responsible for their actions, because they can exercise control over the first springs of thought and will by the direction of the attention. But this is only to temporize with the mechanical tyrant of thought. At whatsoever point exerted, and whether weak or strong, the power of the spirit to control and modify events is the same power. If it is recognized as existing at all, in any nook or corner of human life, a principle is affirmed that cannot be tolerated by the law of energy, as an exhaustive expression of the powers that be. It is impossible, therefore, for us to live our lives as responsible beings, or to treat others as if they were responsible for their choices and actions, without *living* the affirmation of the proposition that mind is, to some extent, an independent cause of events.

Nor is it alone within the realm of morals that the denial of mind as an independent cause can be brought to the test of life. For, as we have already shown, to interpret the whole world from the standpoint of the law of the persistence of force makes it necessary to exclude from reality not only the power of moral choice, but equally the power of effecting any modification in events through what we call

purposive action. All that element in life which this word *purposive* expresses is, from the mechanical standpoint, pure illusion.

This position is not, as a rule, unreservedly stated by the physical realists; but Professor Huxley has no reserves in this matter. He distinctly declares that consciousness has absolutely no power of modifying the course of events. "The consciousness of brutes," he says, "would appear to be related to the mechanism of their body, simply as a collateral product of its working, and to be as completely without any power of modifying that working as the steam-whistle which accompanies the work of a locomotive engine is without influence upon its machinery. Their volition, if they have any, is an emotion indicative of physical changes, not a cause of such changes." What is true of brutes, Professor Huxley continues, is equally true of men. We are "conscious automata" . . . "parts of the great series of causes and effects which, in unbroken continuity, composes that which is, and has been, and shall be, the sum of existence." [1] In another connection we find the following: "Any one who is acquainted with the history of science will admit that its progress has in all ages meant, and now more than ever means, the extension of what we call matter and causation, and the concomitant gradual banishment from all regions of human thought of what we call spirit and spontaneity." [2]

There can be no doubt about the meaning of this.

[1] *Science and Culture*, pp. 243 and 246.

[2] *The Fortnightly Review*, February, 1869.

Every form of what we call mental efficiency is denied. Intelligence enables us to be spectators of what is passing in the machines we call ourselves; but it gives us no power whatever of influencing the course of events.

It is needless to say that every one of us is daily living the affirmation of that which this view of things denies. All that part of our life which transcends that of the baser tribes is the direct outcome of the *belief* that we can shape events to our necessities and desires. We are civilized beings because we have this belief. But this is not all. Because of our consciousness and intelligence we are able to conceive the possibility of living the opposite, and of putting it to the test of experience. Just as we may question the reality of the external world by trying to live the refutation of it in some specific case, receiving the answer in the diminution of life and well-being, according to the measure of the experiment; so also may we test the reality of our power to intelligently influence events by becoming for a time mere spectators of them. The same experiment will do for both cases.

We will have two philosophers, the one an idealist, the other a physical realist. They are walking upon the railway track, absorbed in discussion, when suddenly they perceive an express train bearing down upon them. I challenge you, exclaims the realist, to demonstrate the unreality of the things of the external world by not leaving this track. And I challenge you, returns the idealist, to demonstrate the truth of your belief that we have no power of intel-

ligently influencing events, by becoming a mere spectator of them and remaining where you are. For humanity's sake we will have it that our philosophers, though deeply attached to their special skepticisms, are yet more fond of life, and therefore that they withdraw in time to demonstrate the necessity of *living* the affirmative of that which they theoretically deny.

But some one will say: "This is not philosophy at all, it is mere Philistinism. You have not untied the knot, you have cut it. You have not solved our difficulty by reason, you have simply refused to reason. After many words, you have brought us back to the place whence we set out; and as an answer to the question 'What is reality?' you offer us two contradictory statements which we must accept on peril of our lives." Now I cannot complain that this criticism is unjust, in view of what has hitherto been developed. It is very true that the test of reality offered is not a philosophical but a practical one. It is not addressed to reason. It is rather the knock-down arguments of facts, — an argument with which science, at least, cannot quarrel. We have not yet begun to philosophize. We have been seeking a foundation for philosophy in a substratum of reality; and we have found it, where alone it can be found, in *experience*. But now we are ready to enter upon the justification of our acceptance of these two propositions from a rational point of view.

To begin with, then, we deny altogether the affirmation that the two aspects of reality in question are the proved contradictions of each other. At the

beginning of this article we showed *why* Mr. Spencer's test of reality was impracticable; and now I ask the reader to look a little further and see that the error that lurks in the "universal postulate" is also the underlying error of all the negations of physical realism. It was shown that it is impossible to have exhaustive, absolute truth except when we are dealing with pure abstractions; and therefore that it is only within the realm of the formal sciences, like mathematics and logic, that we can have absolute agreements and contradictions. When we are dealing with concrete things and their relations to each other we are never in possession of anything more than partial truths. We have not fathomed, and cannot fathom, all the possibilities of anything. It is, therefore, continually happening to us that the discovery of new relations changes for us the homogeneous into the heterogeneous, and the harmonious into the discordant. By the same means, also, our discords are transformed into harmonies, order is substituted for confusion, and agreements appear in the place of contradictions.

We can never say that one concrete fact of experience necessarily excludes another. For although we cannot harmonize them, it is always possible that new facts coming in between these two which are contrasted may show that what *appear* to be contradictory phenomena are in truth the complementary parts or functions of a many-sided reality, not fully known to us. As Lotze very truly says: "The word *thing* indicates, so far as known to us, nothing other than the performances which we expect from what

we call things as evidence of their reality." [1] But the performances of things are as manifold and as varied as their relations. Hence we may confidently affirm that the *thing* of our imaginations is never the absolutely real thing, though *some* of the relations which it sustains to us and to other things are truly known and stand as realities.

So also when we come to classify these relations, linking them together in orderly combinations which we call laws, the result, no matter how broad in extent, cannot be an exhaustive statement of reality, but only of certain aspects of it reduced to order. As Judge Stallo puts it: "A particular operation of thought never involves the entire complement of the known or knowable properties of a given *object*, but only such of them as belong to a definite class of relations. In mechanics, for instance, a body is considered simply as a mass of determinate weight and volume (and in some cases figure), without reference to its other physical or chemical properties. In like manner each of the other departments of knowledge effects a classification of objects upon its own peculiar principles, thereby giving rise to different series of concepts in which each concept represents that attribute or group of attributes — that aspect of the object — which it is necessary, in view of the question in hand, to bring into view." [2]

From these considerations, Stallo argues, it is apparent that each of our concepts of a given object is a term or link in a special series or chain of abstrac-

[1] *Microcosmus*, vol. ii. p. 579.

[2] *Concepts of Modern Physics*, p. 134.

tions ; and further, that these chains or series, which are innumerable, not only vary in kind, but are also divergent in direction, so that the scope and the import of any particular concept must always be dependent on the number and the nature of the relations with reference to which the classification of objects has been effected. From this, also, it is clear that all our thoughts of things are fragmentary and symbolical representations of realities whose thorough comprehension, in any single mental act or series of acts, is impossible.

These are general truths ; but the application of them to our problem is not difficult. We have two controversies with physical realism. First, on account of the assumption that the mechanical realities of the world are the contradiction of its spiritual realities ; and, second, on account of the claim that one of these realities as genuine is able to suppress the other as spurious. The above general truths show us that both of these assumptions are errors, and that they have their root in one and the same misconception ; that is, the false idea that the human mind occupies such a central position with regard to the known elements of the universe that it is possible for it to gather them up in a single series, or, in other words, organize them into one harmonious and logical whole.

It is not difficult to see that the group of relations which yields the mechanical conception radiates from an entirely different centre from that which gives us the conception of the power of the human spirit to modify the mechanical order. The former regards

things in their relation to an abstract principle which we call energy. The latter regards things in their relation to an abstract principle which we call spirit. They cannot agree with each other, they cannot contradict each other. One cannot be the proof of the other, but no more can it be its disproof. They are on different planes; and how many or how deep may be the strata of reality lying between these two we cannot guess. The unmistakable and all-important fact is that they coexist in experience. And the circumstance that they cannot be brought into one, that we cannot understand how they are complementary, that they even *appear* to be contradictory, is not a matter for wonder to us. It is just what we ought to expect.

It is what we ought to expect in view of that conception, accepted equally by theology and science, that the universe is an organic whole, dependent upon a central controlling principle or being. If it is assumed that, as viewed from this central position, the cosmos presents the appearance of absolute order and perfect harmony, it follows, necessarily, that when viewed from an extremely one-sided position, treated as the centre, — a position like that occupied by the latest product of evolution, man, — the appearance of things must be the reverse of harmonious.

But, it may be objected, this proves, or rather assumes, too much. If we are so far removed, by reason of our position, from the possibility of grasping the harmony of the universe, how is it that we have been able to reduce so large a number of its ele-

ments to harmony? Instead of finding *two* great divisions of thought opposed to each other, we ought to detect innumerable discrepancies and impossibilities. This certainly seems a reasonable consideration, but it does not weaken our position. Our answer to it is that what we *ought* to find is just what we do find. Our experience, and even our science, is full of just such contrarieties as that which makes mental causation appear to be the antithesis of physical causation; and our basis for reality is not, in truth, twofold, but manifold.

In any comprehensive structure of thought which we build for ourselves, we have to arch over not one space, but many spaces, whose depth we cannot fathom. How can motion be transferred from one body to another? How can any one atom of matter act upon any other? These questions are equally unanswerable with that which asks how mind can act upon matter. When we ignore these questions, taking the facts which they challenge for granted, this is not because everybody understands all about them, or because they are too simple to require an explanation, — but because physical science cannot touch them; they are not in its plane of operations. And if it seems to us that science has made the problem any more intelligible by such a phrase as the "homogeneity of matter," we are simply deceiving ourselves with words. We mistake a mere statement for an explanation.

As Lotze remarks: "Though it needs but little study of physical science to teach us that all forms of action and reaction between substance and sub-

stance are equally obscure, it has yet become a habit, hardly to be overcome, to look upon the mutual influence of body and soul as a particular and exceptional case, in which unfortunately, and contrary to our expectations, that *will* not become clear which in every example of merely physical action is perfectly intelligible." [1]

But what shall we say of those great generalizations of science that disclose the universality of certain principles? Does not the verification of a law like that of the attraction of gravitation, or that of the persistence of force, prove that we *are* capable of reaching the ultimate truth of the relations of things? Does not every such law of universal application bring us nearer to the goal of a perfectly harmonized conception of the cosmos? On the contrary, the addition of each generalization increases the number of connected views of the universe that hold together when considered each by itself; but which, as related to one another, refuse to be reconciled.

As we have already seen, each one of these is a series of abstractions that regards only certain peculiar characteristics in the objects with which it deals. The farther we push any series of abstractions, therefore, the more isolated is the result reached, — isolated both as regards all forms of concrete reality, and also as regards other extreme generalizations. The series of relations which it reduces to a law may be coextensive with the universe; but the very fact that it is the outcome of the last results of abstraction shuts this particular series up to itself.

[1] *Microcosmus*, vol. i. p. 278.

This may seem to the reader to be a harmless assault of purely metaphysical reasoning upon the firmly-compacted, deeply-laid foundations of physical science. We have heard so much about the exactness of modern science, about its carefulness to criticise and prove every step, and we have been told so many times that it is a perfectly consistent and harmonious whole, that an attempt to prove, by abstract reasoning, that it *ought* to be disjointed and self-contradictory may seem worthy of a smile rather than serious attention. But here, as once before, our answer is that just what *ought* to be, for the justification of our reasoning, *is*. Modern science is *not* a consistent whole. It is self-contradictory at its foundations. Each series of abstractions which gives rise to what we call a law of nature, though it may be a wonder of precision in itself, is hopelessly in conflict with other generalizations of science that seem to be equally well-grounded.

This has been set forth with startling clearness in the volume [1] from which I have already quoted; and though it is impossible, in short compass, to produce the impression that results from a careful study of it, I will, for the sake of illustration, try to set before the reader some of the conflicts of thought which it exposes to view.

Fundamental to the mechanical theory of the universe is the assumption that the ultimate atoms of mass are *equal* and *perfectly homogeneous*. This is a corollary from the proposition that all the diversities in nature are caused by motion. But over

[1] *Concepts of Modern Physics*, by J. B. Stallo.

against this most essential part of the mechanical theory we have to place a fundamental law of chemistry, — the so-called law of Avogadro, or Ampère, which, we are told by Professor Cooke, "now holds the same place in chemistry that the law of gravitation does in astronomy." It is as follows: *Equal volumes of all substances, when in the state of gas, and under like conditions, contain the same number of molecules.*[1]

It follows from this that the weights of the molecules must be in proportion to the specific gravities of the gases. But the specific gravities of the gases are different. Having, therefore, different weights to apportion among the same number of molecules in different gases, we are forced to the conclusion that the molecules of one gas weigh more than those of another. As thus stated, it might appear that this difference is true only of compound chemical molecules. But as some substances are monatomic, and some others have molecules consisting of the same number of atoms, it follows that the *ultimate atoms* themselves are of different weights. Here, then, we have a contradiction surely not less startling than that which makes the doctrine of the "persistence of force" the contradiction of the belief in mental causation. But this does not stand alone.

A second fundamental assumption of the mechanical theory is that *the elementary units of mass are absolutely hard and inelastic.* This is at the same time a necessary postulate of the atomo-mechanical theory, and a necessary antithesis of the doctrine of

[1] *The New Chemistry*, by Professor J. P. Cooke, p. 13. 1888.

the conservation of energy. Elasticity cannot be a characteristic of simple atoms, because all elasticity involves motion of parts. The concept elastic atom is, Professor Witwer affirms, "a contradiction in terms." But, on the other hand, Sir William Thomson says "we are forbidden, by the modern theory of the conservation of energy, to assume inelasticity, or anything short of perfect elasticity, of the ultimate molecules, whether of ultra-mundane or mundane matter."

The necessity here referred to is imposed upon science by what is known as the *kinetic theory of gases.* In the light of this theory a gaseous body is a swarm of innumerable solid particles incessantly moving about with different velocities in rectilinear paths of all conceivable directions, the velocities and directions being changed by mutual encounters at intervals, which are short in comparison with ordinary standards of duration, but indefinitely long as compared with the duration of the encounters. Now, if these particles were wholly inelastic, or imperfectly elastic, the motion must soon come to an end.

Stallo draws attention to the fact that distinguished advocates of the kinetic hypothesis have taxed their ingenuity in the search of methods for the extrication of the mechanical theory from the dilemma in which it is thus involved. But after passing in review the most notable efforts made in this direction, he reaches the following conclusion: "The difficulty, then, appears to be inherent and insoluble. There is no method known to physical science which enables it to renounce the assumption of the perfect

elasticity of the particles whereof ponderable bodies and their hypothetical imponderable envelopes are said to be composed, however clearly this assumption conflicts with one of the essential requirements of the mechanical theory."[1]

Again, according to the mechanical theory, motion, like mass, is indestructible and unchangeable; it cannot vanish and reappear. There is, therefore, no such thing as potential energy. All energy is, in reality, kinetic. But as in the former case, "modern science peremptorily refuses its assent. It asserts that all, or nearly all, physical changes in the universe are mutual conversions of kinetic and potential energies; that energy is incessantly stored as virtual power and restored as actual motion." To make this clear, our author briefly reviews the history of the doctrine of the conservation of energy, and shows that it has been, in effect, a progressive abandonment of the proposition that *all potential energy is, in reality, kinetic.*

These examples are, perhaps, enough to illustrate our point. But I will adduce one other, which may prove the most impressive of all, because of our familiarity with the law involved. There can hardly be any question as to the preëminence, among scientific discoveries, of that one of Sir Isaac Newton generally called *the law of the attraction of gravitation.* In one view this law may be said to be the central principle of modern science. Chemistry, as a science of weights, is built upon it as really as astronomy and physics. What, then, shall we make

[1] Page 51.

of the fact that it is, in another aspect, the absolute contradiction of the fundamental postulates of scientific thought? — that it refuses all classification with other known physical forces as absolutely as the concept spirit?

A postulate of the mechanical theory universally accepted by physicists has been that all physical action is by *impact*. The elementary units of mass are absolutely inert, therefore a mass can have motion induced in it only by contact with another mass. In short, there are in nature no pulls, but only thrusts. All force is not merely *vis impressa*, but *vis a tergo*. There cannot be any such thing, therefore, as action at a distance. The reason for this is set forth substantially as follows by Professor Challis. "There is no other kind of force than pressure by contact of one body with another. This hypothesis is made on the principle of admitting no fundamental ideas that are not referable to sensation and experience. It is true that we see bodies obeying the influence of an external force, as when a body descends toward the earth by the action of gravity; so far as the sense of sight informs us we do not in such cases perceive either the contact or the presence of another body. But we have also the sense of touch or of pressure by contact, for instance, of the hand with another body; and we feel in ourselves the power of causing motion by such pressure. The consciousness of this power and the sense of touch give a distinct idea, such as all the world understands and acts upon, as to how a body may be moved. And the rule of philosophy which makes personal sensation and experi-

ence the basis of scientific knowledge, as they are the basis of the knowledge that regulates the common transactions of life, forbids recognizing any other mode than this. When, therefore, a body is caused to move without apparent contact and pressure of another body, it must still be concluded that the pressing body, although invisible, exists; unless we are prepared to admit that there are physical operations which are and ever will be incomprehensible to us."[1]

This aspect of the law of gravitation attracted great attention when it was first formulated, and called out the severest criticisms and opposition from Newton's contemporaries. "It is interesting," Stallo remarks, "to note the energy with which the philosophers and mathematicians of his day protested against the assumption of physical action at a distance. Huygens did not hesitate to say that 'Newton's principle of attraction appeared to him absurd.' Leibnitz called it 'an incorporeal and inexplicable power.' John Bernoulli denounced the two suppositions of an attractive faculty and a perfect void as revolting to minds accustomed to receiving no principles in physics save those which are incontestable and evident." Among later physicists, Euler observed that the action of gravity must be due either to the intervention of a spirit or to that of some subtle material medium escaping the perception of our senses; and his rival, D'Alembert, classified gravity as one of the causes productive of motion, whose real nature is to us entirely unknown, in con-

[1] *Concepts of Modern Physics*, p. 56.

tradistinction to action by impact, of which we have a clear mechanical conception.

This contrariety between the doctrine of gravitation and the accepted principles of physics was as clearly seen by Newton as by any of his critics; and he repeatedly and emphatically disowned the implications which his formula seemed to involve. He carefully explained that the force which urges bodies in their central approach was to him a purely mathematical concept, involving no consideration of real and primary physical causes. "It is inconceivable," he says, "that inanimate brute matter should, without the mediation of something else which is not material, operate upon and affect other matter, without mutual contact. . . . That gravity should be innate, inherent, and essential to matter, so that one body may act upon another at a distance, through a vacuum, without the mediation of anything else by and through which their action may be conveyed from one to another, is to me so great an absurdity that I believe no man, who has in philosophical matters a competent faculty of thinking, can ever fall into it. Gravity must be caused by an agent acting constantly according to certain laws; but whether this agent be material or immaterial, I have left to the consideration of my readers."[1] In another connection he says: "The reason of these properties of gravity I have not as yet been able to deduce; and I frame no hypotheses."

Have later physicists made any advance upon this position? In one sense they have, for they have

[1] *Concepts of Modern Physics*, p. 54.

made *many* hypotheses. In some of these gravitation is referred to the wave motion of an elastic interstellar and interatomic fluid similar to, or identical with, the luminiferous ether; but the criticism of Arago is considered fatal to these. It is briefly summed up as follows: "If attraction is the result of the impulsion of a fluid, its action must employ a finite time in traversing the immense spaces which separate the celestial bodies." This is fatal, because it is demonstrable that the action of gravity is instantaneous. There have been also impact theories. But the only one of these seriously discussed by modern physicists and astronomers, that of Le Sage, has been conclusively set aside by the criticism of Clerk Maxwell.

We are brought, then, to this: the broadest and most fruitful generalization of scientific thought, the fundamental law of cosmical significance, has to be stated in language which involves the contradiction of the mechanical theory. "Every particle of matter in the universe," it says, "*attracts* every other particle with a force directly proportioned to the mass of the attracting particle, and inversely to the square of the distance between them." Without this idea of *attraction*, — this conception of one body acting upon another at a distance, the above law could never have been discovered by Newton. It never could have been imagined by any one. When we state it, when we think it, we are just as much in conflict with the mechanical conception of things as when we think of ourselves as free agents; and when philosophy builds upon this latter conception

as a reality it has the indorsement of reason no less than science has it when building on the law of the attraction of gravitation. In other words, the idea of mental causation as related to the idea of mechanical causation presents no *exceptional* difficulties.

The emphasis that has been laid upon the conflict of these two ideas belongs, then, not to this age but to one of narrower outlooks. It had its rise in the infancy of science, when the two great generalizations of which mind and mechanism are the expression faced each other in solitary grandeur. But the progress of science has broken up this duality. For, instead of throwing the whole weight of its authority on the mechanical side, as physical realism assumes, it has in reality brought to light the manifold antagonisms that, hitherto unperceived, lurked within the concept mechanism. Each great generalization, as it has taken definite form, has declared itself as a more or less independent aspect of the reality of things. It has contributed one more evidence to support the view that the study of the external world tends not to the unification of our knowledge, but to the enlargement of its area and to the multiplication of the points of view from which its reality must be contemplated.

In the words of one who, both from the side of science and of philosophy, has made a profound study of this problem: "By nothing but by a fatal confidence in its own infallibility can science be led so far astray as to attach its knowledge of complex series of phenomena by preference to the fewest possible axioms, or to the slender thread of a single

principle, which causes the whole to fall if it gives way. Its labor will be more wisely directed if, instead of raising its structure on the sharp edge of a single fundamental view, and performing the marvelous feat of achieving the greatest possible instability by the most recondite means, it looks out for the broadest basis on which to build; and, starting modestly, traces the given facts to the proximate grounds of explanation required by their distinctly recognized peculiarities." [1]

As to the *rationality*, then, of holding beliefs with regard to the world that are apparently destructive of each other, we reach a conclusion that may be summarized as follows: Since we are unable to penetrate to the essential reality of the world by analyzing its parts, and since, as a *whole* of vast complexity, it far transcends the range of our comprehension; therefore, it is reasonable to reject any system which professes to deduce all our knowledge from a single scientific principle. It is reasonable to say of such a system that its very completeness and exclusiveness is its own condemnation. And, on the other hand, it is reasonable to believe that we make our nearest approach to reality when we entertain as real a plurality of principles, or aspects of the world, which we are not able *directly* to combine into a harmonious whole.

The bearing of this conclusion upon the question of our higher beliefs will be discussed in the next chapter.

[1] *Microcosmus*, vol. i. p. 271.

CHAPTER V.

THE THING-IN-ITSELF.

It has, perhaps, occurred to the reader that the argument used in the preceding chapter bears a strong resemblance to that too familiar form of moral justification sometimes called "leveling down." When a man finds himself utterly without excuse for his own conduct, it is still possible for him to demonstrate that his neighbor is no better than himself. We have labored to show that modern science abounds in assumptions that are as irreconcilable in their conflict as any of those forced upon us by practical experience. How, it may be asked, does this help matters? We entered upon our inquiry with the hope of finding a rational basis for our higher beliefs; but does not the foregoing argument, instead of bringing us nearer to the desired goal, push us in the opposite direction? Does it not, so far as it proves anything, prove that the reality of things is unknowable?

This is not a question to be lightly passed over. The word *agnosticism* represents a most powerful current of thought in our day, not the less significant because, in the great majority of cases, it is of the nature of an undertow. The rapidity of our progress in knowledge is, of itself, most unsettling.

The necessity of continually changing our ideas gradually begets in us the feeling that all things are subject to change, — that the reality of to-day may at any moment pass into the illusion of to-morrow. The history of science in the past is prophetic of its future. Looking back from the vantage ground that we occupy we can see that the exploded theories of the present generation were the verities of the one before it; and when we ask ourselves the question, has science now reached a resting-place? we have to answer that it was never farther from it; that it is advancing with a greater rapidity than ever before; that hypotheses are shorter-lived than they used to be, less confidently held, more quickly modified, more easily superseded.

Under such circumstances it does not require any deep philosophy of the abstract sort to incline a man, who enters into the thought of his time, to skepticism. We may even say that, so far as science itself is concerned, skepticism is the normal and necessary attitude of mind. To be receptive is to be, in a measure, skeptical. But a tendency of this kind, emanating from science, may be strongly reinforced and accentuated by an abstract philosophy; and it so happens that we have just this combination to contend with in our time. Kant's philosophy, as we have already seen, has worked mainly as a leaven of agnosticism. His positive reconstructions of belief have remained almost a dead letter, while his destructive criticism has been abundantly fruitful.

As a result, we have two leading schools of skepticism, — the English half-way school, represented by

Mr. Spencer, and the thorough-going pessimistic school of Schopenhauer and Von Hartmann. The former is optimistic, simply because it is inconsistent, — because it refuses to apply to *all* our knowledge the criticism that it finds so effective for the demolition of one half of it. We have shown, in the "Answer of Objective Analysis," that such discrimination is purely arbitrary; that it is without foundation either in experience or in reason. But this does not appear to its advocates. They call themselves *realists;* and while speaking much about the proneness of the human mind to illusions, and the falseness of some of its fundamental conceptions, they at the same time proclaim to the world a great philosophical discovery. Reality, they seem to say, which, in the light of science, is rapidly disappearing from much of our knowledge, may yet be retained and set upon a sure basis by limiting it to one class of our ideas. But we have only to cross the Channel to find a skepticism of a very different sort, — more thorough-going, more consistent, and, it is unnecessary to say, more disheartening.

The assumption made by a universally destructive skepticism is this. Whenever it can be shown that a belief does not represent *absolute* and *final* truth, it is proved thereby to be an illusion. Working on this assumption, the pessimistic philosophers reduce the whole world of sensible appearances, as well as all man's convictions about his own personality, to illusion. Consciousness is a perpetual fountain of lies, — a generator of ever-varying, but never-ceasing hallucinations which keep man forever on the tire-

some treadmill of striving, in the hope of a happiness that he can never achieve. The desire to live and to become is therefore the great evil of the world; and the one hope of humanity is to escape from consciousness, and so from all the painful experiences that it entails.

An easy descent into this logical, uncompromising form of skepticism may seem to have been prepared by our argument. For if this is sound, does it not prove that our knowledge is unstable, that it is relative, that it is fragmentary? But the conclusions of skepticism, let us observe, are not the necessary outcome of these premises. Agnosticism is based upon an assumption that stands quite by itself, — the assumption, namely, that because our knowledge is modifiable, relative, and fragmentary, it is therefore useless as a guide to transcendent realities. This position I am prepared to contest; and in what follows I shall try to show that our knowledge is sufficiently stable, sufficiently positive, and sufficiently homogeneous to enable us to construct a reasonable and effective theory of the meaning of the world and of the value of our lives in it.

First, then, let us consider it as *unstable*. It may be said, in criticism of our four fundamental postulates of reality, that they have reference only to the least mutable elements of an exceedingly mutable class of things. Any structure that we may build upon them, therefore, will not be founded on the everlasting rock, but only on the most permanent or least variable part of an ever-shifting sandbank. Their unsatisfactory nature appears the moment we

attempt to adjust particular things to them. It is easy to affirm with confidence the reality of the *things* of the external world; but when it comes to saying in what the reality of this or that object consists, we are at a loss for an answer. We simply enumerate different relations which it sustains to ourselves or to other objects, and when we come to the end of our list we have to add a mental *et cetera.* We know that we have not exhausted the subject, and we know, further, that the discovery of new relations frequently modifies and sometimes even reverses the ideas of the object hitherto held. So also we affirm without hesitation that the mind has the power of modifying the natural course of events. But it is impossible for us to say in regard to any given action just what part of it may be ascribed to purposiveness or free will, and how much must be set down to the agency of coercive influences. Science has constantly worked for the limitation of our belief in free agency; and the area within which it exercises control seems very much larger to some men than to others.

All this is very true. Our propositions do not accurately define where reality leaves off and where illusion begins in anything. They affirm an element of reality in certain great classes of our experiences, without denying that in each of these there has been a deposit of error accompanying the deposit of truth; and that a progressive elimination of this error is possible. But our knowledge is not nearly so unstable as the above criticism implies. Experience itself testifies to its possession of certain invariable, uni-

versal, and permanent elements as distinctly as it does to the inconstancy or transitional character of other elements. *Why* there should be such a difference in these, as that one should appear to be an essential and vital part of experience, and another not so, is a pertinent question; and though the situation would not be in the least altered if no answer to it could be given, yet it is a great intellectual advance when our faith in that which appears as necessary is supplemented by a reason, even though that reason should be little more than an analogy.

The question asked in such a case usually takes this form, — Is the difference, which is said to exist between the so-called permanent elements of experience and the great mass that is transitional, a difference of *kind* or only a difference of *degree?* We may safely say that it is both; for differences of kind, all the world over, seem to be based upon differences of degree, and often the former emerge from the latter by such gradations as to make it impossible for us to designate the exact point at which kind number one ceases, and kind number two begins. Human experience is ranged on a finely graduated scale. It varies in its breadth and value from the novel, uninterpreted, unclassified sensation of the present hour to the substratum of common, universally accepted fact, upon which the human race has been building from its first beginnings.

We might illustrate it to the eye by a pyramid, each successive step of which carries us higher, but at the same time lands us on a plane of diminished area. Or, better still, while our attention is turned

to degrees of permanence, may we refer to the illustration of a tree, the trunk and main roots of which represent the essential stable members of experience, while the smaller branches, leaves, and rootlets correspond to all that is changeable and transitional. And as in the tree the permanence of certain parts has been determined by conflict with environment, so also in experience there is a never-ending conflict, by means of which all that is of temporary value is either destroyed or transformed, while those members that are essential to the maintenance of life and growth become fixed in their general form and characteristics.

The four propositions which I have likened to the woody stem and main roots of the tree of human experience are at the same time the oldest and most permanent members of it, just because human experience could neither begin nor continue without them. They sprung into existence almost simultaneously, as the result of conscious human effort in a world where to live is to act; and the conviction of their truth and immutability has become more firmly integrated in human consciousness by every subsequent action and reaction between man and his environment.

We may even carry our analogy one step farther without straining it. For as the trunk of the tree is made up of a multitude of hardened cells that were once plastic, so these general abstract propositions of ours are the result of innumerable separate convictions that have sprung up in connection with particular things. And these particular convictions,

though ranged, as has been said, on a finely graduated scale, may yet be divided into two classes, one of which is continually passing into the other just as growing cells become transformed into rigid ones. The one class we may call the convictions of persuasion, the other the convictions of coercion. It is not always easy to say where persuasion ends and coercion begins; but the latter word expresses a characteristic of many of our beliefs with regard to particular things that may be treated as final, while the former describes a still larger number that are not final but tentative. But many of this class are almost as firmly ensconced in our organized beliefs as those which from the beginning have been coercive.

So much for differences of kind and degree. Now let us turn our attention to another aspect of the charge of *instability*. It grows out of the assumption that what we call our established knowledge is radically changed by the constant accessions that it receives. The impression that it is so easily obtains a hold upon the imagination, because our minds are much more alive to the novel elements of experience than they are to the old familiar ones. But as matter of fact, the new knowledge rarely displaces or even essentially disturbs the old, but ranges itself peacefully alongside. This may seem a rash statement to make in view of all the revolutions signalized by modern thought. But it will require, I think, only a little reflection to be convinced that the number of discoveries that necessitate any great readjustment of our thought bears a

very small proportion to the innumerable multitude that fall naturally into place, amplifying and illuminating the knowledge we already possess.

The science of chemistry, for instance, is founded on the analysis of substances that appear to our ordinary experience as final realities. It separates these, in some cases, into a great number of diverse realities; but this discovery of complexity and diversity of elements does not change the reality of the original substance, as known to our uses. Chemistry now treats something over seventy substances as final; yet it knows that any day some of these may be analyzed and their names erased from the chemical peerage. But if this should happen, the substance analyzed would continue to be the same reality that it has always been; we know something more about it, but the new knowledge does not displace the old. As Professor Cooke remarks: "Were a process discovered to-morrow by which a new substance could be produced from the material of sulphur, we should hail at once the discovery of a new element, and sulphur would be banished forever from the list of elementary substances. Yet the qualities of sulphur would not be changed thereby. It would still be used for making sulphuric acid and bleaching old bonnets, as if nothing had happened."

It is not otherwise when the process is from the relatively simple to the complex. The substance glycerine, first known to science as a softening and soothing principle, is subsequently discovered to be capable of being transformed, by combination with other substances, into a highly explosive and most

destructive principle. But the milder moods of our old friend are not made thereby less real or less acceptable. Even in cases where there is a complete revolution in our conception of natural processes, our old knowledge is affected far less than it appears to be.

Let us take, for instance, the discovery that the planet upon which we live revolves about the sun, and not, as was for ages believed, the sun about it. This reversal of our scientific prepossessions did not in the least disarrange our former practical beliefs with regard to the relations which the sun sustains to us and to our world. Notwithstanding our new knowledge the sun still rises and sets for us, and we order all our lives with relation to it in the same way as formerly. That is to say, our unscientific, experimentally formed ideas with regard to the sun were substantially true. They represented very real relations. Even astronomy itself was affected far less than has been generally supposed. The Ptolemaic system was just as correct as a basis for astronomical calculations as the more truthful and simple one that superseded it; and the reason why it was so is to be found in the fact that the relations upon which it was based were *real* relations.

This brings us to a very important consideration, — one that we shall have occasion to emphasize at a subsequent point in our argument, namely, that most of the revolutions in our thought occur in the region of scientific hypotheses. They are not, therefore, worthy the name of revolutions. They are rather transformations, the changing phases of beliefs that are in the formative state. It is only our

short-sightedness that ever regards these hypotheses as established and final; and their remoteness, for the most part, from our ordinary experimental living renders their actual modifying influence on accepted reality far less than it appears, to our wonder-loving imaginations, to be. In opposition, then, to the criticism that our knowledge is too unstable to afford a foundation for reality, we affirm that there is a permanent and reliable substratum to our knowledge, and that reality, of a progressive and modifiable kind, *is* within our reach.

But now we have to enter on the defense of our knowledge from a more subtile kind of attack. It is said that all our knowledge is *relative*, and therefore of no use as a guide to reality. This objection is radical; and, furthermore, it requires our careful attention, because it carries with it a most imposing weight of authority and respectability. The greatest names in philosophy are associated with it, and the consensus of generations of eminent thinkers has, in the past, made its non-reception stand as a sure sign of metaphysical incapacity. But metaphysics, though often disrespectfully alluded to in these days as a dead science, is attesting its vitality, if in no other way, by rising up to overthrow this tyrant of its own imposing. Let us see what the doctrine is, and how it may be met. We will take the least abstruse statement of it first.

Man, it is said, represents only one special kind of intelligence; the degree and the quality of his knowledge are dependent upon his physical organization. He has certain faculties, more or less perfectly de-

veloped by his conflict with environment; but these faculties might have been other than they are. Individual men are so different from each other that they may be said to live in different worlds; and we know from the examination both of the structure and of the behavior of other animals that they possess faculties very different from ours. However useful our knowledge of the world may be to us, therefore, it is not the *real* thing. It is not the knowledge of the world that a mind having faculties coextensive with all the modes of being in the universe would possess. As Kant has said, man can know nothing more of the nature of objects than his own mode of perceiving them, which is peculiar to himself.

The reply to this is that completeness of knowledge is not claimed for man by any one, least of all by those who worship a God of infinite attributes. All that we affirm is that our understanding of things is correct as far as it goes, — that it presents us with realities as related to our present state of being. Since we are progressive beings, our knowledge must necessarily be subject to modification and amplification; but there is no reason to anticipate that the fundamental assumptions by which we live will ever be overthrown. There is every reason, on the contrary, to believe that all our direct knowledge of relations is true. Are we not ourselves a part of that universe that we seek to know? If that universe is a connected and orderly whole, as we believe, if it is governed by laws, how should it come about that our responses to environment should result in falsehood?

When I know one single relation which a part of this universe sustains to my intelligence, I am certainly acquainted with one reality; and when I know how two or more of these parts are related to each other in my intelligence, I become possessed of another reality more complex than the first. As I continue to add to the number and complexity of these relations, my knowledge, as a whole, becomes greatly enlarged and modified; but the modification consists in the discovery that what I had taken to be the whole expression of reality was only a partial expression of it. My knowledge, regarded as complete, has been discredited, but it has not altogether disappeared. Most of our illusions are the result of treating a single relation, or a given set of relations, as if they were the final expression of reality.

But the disciple of Kant may return to the controversy with the reminder that the deliverances of the human understanding, based upon experience, contradict each other, and thereby *demonstrate* their falseness as representations of a world assumed to be an orderly whole, without flaws and without contradictions.

It is just at this point that the difference between our way of accounting for the contrarieties of reason and Kant's way can be clearly set forth. It may have seemed to the reader that we had wholly gone over to Kant when, on page ninety-two of this book, it was said, "We may confidently affirm that the thing of our imaginations is never the *absolutely* real thing." But there is a wide difference between holding, as Kant does, that our knowledge must ever

remain "*toto cœlo* different from the cognition of an object in itself," and holding, as we do, that our knowledge is only a partial expression of reality, but true as far as it goes. It can hardly be questioned, I think, that the latter account of the matter is a sufficient explanation of the contrarieties of experience. The history of science presents us with a multitude of instances in which supposed contradictions have been reconciled by the discovery of new relations. I will cite only one.

When Copernicus astonished the world with the announcement of his apparently wild hypothesis that the earth revolves daily upon its own axis, and that the dwellers on the other side of the planet have their feet toward our feet, and their heads pointing in the direction which to us is down, it was a sufficient refutation to say — impossible, for in that case there would be no dwellers on the earth. To the imagination of that day it was clear that every movable thing on the upper side of the planet must necessarily fall off on reaching the under side. It was only when the conception was grasped that all our notions of up and down are not absolute, not an exhaustive expression of reality, but wholly relative to the centre of the earth, that the impossible was seen to be possible. Then it became clear that what had seemed to be absolutely *up* was just as really, from another point of view, absolutely *down*, there being, in fact, no reference in the affirmation to absolute space, but only the expression of our relation to one point in it.

Extending the idea of up and down, we are forced

to the conclusion that *up*, as related to the centre of our planet, must be *down* to one contemplating the earth from the sun; and in view of a more remote centre, about which our solar system revolves, we must again reverse the application of the terms.

Just so it seems to me with regard to the contradiction that exists between the relations made known to our subjective experience and those which appear to us to exist between things independently of us. Cosmic laws come to us as radiations from some remote centre, not directly made known to our experience; relations, they seem to be, that embrace and include everything within themselves. But for all that, there is no reason for concluding, as Kant does, that the relations that radiate in an opposite direction from the known centre of the self-conscious *ego* are false. The centre of the *ego* is not *the* centre of the universe, but it is *a* centre — a centre of reality and power. It cannot be removed from the realm of actualities by the truth of cosmic laws any more than the fact of the attracting power of the earth can be wiped out by the fact of the attracting power of the sun. The harmony of the universe is maintained by the interaction of different centres.

But now, if all we have claimed under this head be granted, we have met only one of the objections that may be urged against our knowledge on the score of its relativity. Suppose, it may be said, we do know relations truthfully, the *relations* of things are not *things*. Kant and Sir William Hamilton agree in saying that the very act of knowing is a drawing of things out of their absolute reality into

relation to the subject knowing them. The essential being of things must, therefore, be eternally hid from us. We cannot know anything *as it is in itself.*

The impossibility here spoken of, let us observe, is one that does not attach specially to the *human* understanding, as limited. It is an imperfection that belongs to the process of knowing as knowing. This is explicitly stated by Hamilton in the following passage: "We may suppose existence to have a thousand modes; but these thousand modes are all to us as zero, unless we possess faculties accommodated to their apprehension. But were the number of our faculties coextensive with the modes of being, — had we for each of these thousand modes a separate organ competent to make it known to us, — still would our whole knowledge be, as it is at present, only of the relative. Of existence absolutely and in itself we should then be as ignorant as we are now."[1]

When we have reached this point, it is natural that we should try hard to form some notion of the value of these "things in themselves," — things that exist forever apart from all intelligence. It is a pertinent question to ask, Are they worth knowing? Are they of any account in the great universe of reality? Our respect is ordinarily accorded to things only as they make themselves felt, or as they are deemed capable of making themselves felt. But in the case of these absolute existences that can never reach us any more than we can reach them, what ground can there be for abasing ourselves and despising our knowledge in view of them? They are,

[1] *Metaphysics*, vol. i. p. 153.

if they are, for us as if they had no existence. We cannot love them, we cannot hate them, we cannot obey or disobey them; nor can we be moved to humility, or to reverence, or to religion in our contemplation of them. May we not, then, venture to ask the question, Are they, or is it — the thing-in-itself — anything?

There are more ways than one of looking at this fundamental question. From one point of view, that of an outside spectator, it seems easy enough to answer it in the negative. A time-honored ontological maxim tells us that "the reality of things can be ascertained only by divesting them of their relations." According to this view, essence or substance was conceived of as existing at the centre of each group of phenomena; and this, the metaphysician held, could be discovered in no other way than by finding a residuum when all phenomena, or existence-in-relation, had been analyzed away. Now, as no residuum is ever discoverable at the end of such a process, the inference is that the thing-in-itself is a mere creature of the imagination. May we not, with Hegel, affirm that "pure being is pure nothing"? — that this idea of a distinct reality, different from the manifestations of reality, is simply an idea? Things, we will say, are really groups of relations which we are able to regard as real entities only by postulating a centre to which each of the separate relations is referred; but this centre is, like the mathematical point, nothing more than a convenience of thought.

With this understanding, then, let us reinvest the term *essential being*, and use it to signify the sum

of the real relations of anything. In this sense the thing-in-itself is not the antithesis of the knowable, or of that which exists in relations. It is, on the contrary, the fullness of all things in the unity of all their relations. It is the completeness of knowledge. But it is unattainable by us, because our knowledge, though progressive, is ever incomplete.

A similar view of the case as related to the words *noumenon* and *phenomenon* is very clearly stated by the author of "Scottish Philosophy." [1] "It is true," he says, "that we do not know the whole nature of anything; and the term noumenon is useful, therefore, as contrasting the object, in all the completeness of the qualities which really belong to it, with the comparatively imperfect knowledge of its qualities which we have yet attained. The noumenon is the object from the point of view of the universe; the phenomenon is the same object from the point of view of human knowledge. The noumenon embraces in this way the qualities yet to be discovered as well as those already known; while the term phenomenon is necessarily limited to what we actually know. But if, *ex hypothesi*, a thing were completely to phenomenalize itself to us, — that is, if we had an exhaustive knowledge of the qualities of any single thing, — then the knowledge of the phenomenon would be, in that case, in the strictest sense the knowledge of the noumenon. The noumenon is nothing but the manifold and different qualities reflected into unity."

But at this point we again encounter a serious difficulty. Our knowledge is *fragmentary*. The object

[1] Page 173.

of our search, be it remembered, is not simply to find certain constituents or members of reality, but more especially to discover if these, when found, can be so organized as to afford a basis for our higher beliefs. But the conclusion we have reached seems to pluck the very heart out of those beliefs. The vital centre of religion is the conception of a noumenon, a thing-in-itself, a *being* that sustains vital and special relations to all phenomena. When, therefore, we reduce the world to a mere aggregate of qualities or relations, and say the noumenon is this aggregate and nothing more, do we not, in our reaction from agnosticism, commit ourselves to a very positive form of atheism? — namely, to the denial that there is any such thing as a soul either in man or in the great complex that we call the universe? To say that the soul is a mere aggregate of relations reflected into unity is the same as to say that the distinctive characteristic of soul, its *efficiency*, is an illusion. The conception *real being* has lost all its meaning unless it continues to represent the constitutive and sustaining centre of a group of manifold relations that would in its absence be disunited.

While apparently traveling away from skepticism, our path has unexpectedly opened upon an aggravated form of it. We must, therefore, retrace our steps to the point occupied when we began to answer the question as to the existence of a distinctive thing-in-itself.

At that point we intimated that there were more ways than one of looking at this question; and then we selected one which was characterized as that of

an outside spectator. The only conclusion reached, then, is that, so long as we confine ourselves to this view, regarding the world as an aggregate of things foreign to us, and related only to each other, so long we must adhere to the position that the noumenon is unknowable, and that we can discover no evidence of its existence. We may return to Sir William Hamilton and agree with him that even if the number of our faculties were coextensive with the modes of being, so that all of those modes should be exhaustively known to us, still would our whole knowledge be, as it is at present, only of the relative. Of existence absolutely and in itself we should then be as ignorant as we are now. In other words, the mere extension of our knowledge could never advance us one step toward an inward understanding of things. Always we should be grasping the qualities, the characteristics of things, never that which makes the multiplicity of qualities a unity.

Now, then, for another point of view. Surely the conviction that there is a real centre or essence of being, of which all the qualities or aspects of being are the emanations, must have some origin. It is hard to believe that a conception of which we are so tenacious has never been represented in actual experience, — that we have not, somewhere or at some time, known *a* thing-in-itself. If, when looking at the world from the outside, we said, "The noumenon is nothing but the manifold and different qualities reflected into unity," we must now ask, what is it that reflects, and whence comes the unity?

Does it not come from that very element of reality

that the outside view excludes? Is not the self-conscious soul of man *a thing-in-itself*, known directly as a peculiar and vital element of all experiences? If we make this hypothesis, we must throw aside our transformed conception of the noumenon, and return to the more familiar one. We must abandon the thought that the thing-in-itself is to be known only from the point of view of the universe. We must maintain that it is not necessary to grasp *all* the relations of a thing in order to know its essential being; but, on the contrary, that the inmost reality of one thing, at least, is made known to us in every self-conscious act.

This is not the same as to say that the real being of anything is *exhaustively* known by us. It is not to deny that an *absolute* knowledge of *the* noumenon, the central being of the universe, is unattainable except from the standpoint of universal knowledge. Neither is it the same as to say that the reality of being may be known in the absence of all relations. Knowledge arises only through relations, but it is not *confined* to relations. The notion that it is so confined arises only in our abstract reasoning. It does not correspond to experience. When, by an outside stimulus, I am made aware of a relation existing between myself and something else, I am at the same time made aware of *myself*, — of myself as related, it may be, but anyhow, of myself. And this knowledge of myself is something over and above my knowledge of the relation.

If urged to explain what this something is, I would say, it is *a consciousness of being*, pure and

simple. This consciousness, distinct from all relations, abides through all experiences. And it is because it so abides, because it is a party to every relation of experience, and the centre of all relations, that the idea of unity in multiplicity first springs up, and then becomes the constructive principle in our judgment of all things.

But it may be urged, this distinctive unity of the *ego* is only an *appearance*. It is the result of introspection. The *ego* looking upon itself, as if from the position of outside spectator, *seems* to itself to be a unity; but this seeming, constituting as it does a particular, exceptional, unclassifiable experience, ought not to be regarded as a reality.

This objection is only a particular application of a view of things already considered at some length; and it might seem a sufficient answer to refer to our general proposition that any affirmation of experience that we are constantly obliged not only to think, but to live, must be regarded as true. But as the point under discussion is the very keystone of our philosophy, I would further point out that the situation indicated by this objection does not correspond to the facts. It is not true that the idea of the unity of self has its origin in a certain aspect or appearance which subjective phenomena assume to us as spectators. The idea in question is not the result of reflection, it is a direct consciousness of self. At the same time I maintain that, though it does not arise in reflection, it is indorsed by it, — that the logic of subjective experiences, from an analytical point of view, compels the very same belief

that comes, without reasoning, from the deliverances of consciousness.

The great argument of Kant's "Critique," known as the *transcendental deduction of the unity of apperception*, seems to me to be unanswerable. Notwithstanding its formidable name, it admits of a fairly simple statement. It takes its departure from experience. Experience is itself a complex unity. It is made up of parts, but these parts are, somehow, bound together as a whole. This, Kant argues, would be impossible, a contradiction of reason, in the *absence* of a permanent unifying subject. Without such a subject, experience could be nothing other than a succession of absolutely isolated phenomena, without continuity and without intelligibility. Lotze expresses very much the same thought when he says, "Our belief in the soul's unity rests not on our appearing to ourselves such a unity, but on our being able to appear to ourselves *at all*. . . . If a being can appear anyhow to itself, or other things to it, it must be capable of unifying manifold phenomena in an absolute indivisibility of its nature." [1]

Again, the consideration that the unifying subject thus presented to consciousness and reason is *unique* and *unclassifiable* does not count against its reality; for it is just such a reality that we are looking for, just such a reality that we need to explain a world that is otherwise inexplicable.

But it may be asked, of what value is the knowledge of a noumenon that is nothing more than the consciousness of being, — the unity that persists

[1] *Microcosmus*, vol. i. p. 157.

through all diversity? Small, indeed, if it were this and nothing more. But the mystery of being is not the only one elucidated by a reference to self-consciousness. Having found the reality of being, we are able to solve some other riddles of philosophy. The concepts *intelligence* and *cause* have, equally with that of the unity of consciousness, baffled all attempts at explanation, as resultants from a plurality of elements. The analysis of any number of intelligent acts throws no light on the origin of intelligence itself. It is an ultimate, undecomposable attribute of being, known directly, and only, to self-consciousness. The knowledge of it, like that of being, comes, it is true, only *through* relations, through intelligent acts; but it is something other than the sum of all these relations. It is an essential faculty or activity of being that is a party to all intelligent acts; and it sustains a vital relation to each one of these acts, different to the relations which they sustain to each other.

It is the same with the idea of *cause*. No effort of philosophy has proved more abortive than that which attempts to deduce the concept *cause* from the relations which things sustain to each other. In other words, physical causation, from the purely mechanical point of view, is not causation at all. It is instrumentality. We can deduce nothing from our study of the external world other than a chain of sequences; and with these the idea of cause has nothing whatever to do, save as it is introduced from some other source. The essential meaning of the word *cause* is origination. And, no

matter how widely our science of external phenomena extends itself, the *origin* of things is that which it can never touch. The universe presents itself to it only as an eternal round of sequences without beginning and without end; and the idea of *origin* could never have been suggested by its contemplation were not the contemplator a self-conscious being, capable of supplying from his own inner experience a phase of reality otherwise unknowable. In other words, we have the idea of origination, and we seek to discover the origin of things, because we directly know ourselves as originators.

To sum up our knowledge, then, we will say that our thing-in-itself is known to us as the *unity of being*, as *intelligence*, and as *cause*.

Have we, then, after all, swung round to idealism? By no means. Our self-conscious *ego* is not the unclothed, isolated abstraction of the subjective philosophy. It is not the compound subject-object *ego* of Fichte. It is the complex, embodied *ego* of experience, — the *ego* plus all the relations which it sustains to other objects. It is the *ego* as related to its body of organized animal tissues, the *ego* as related to the whole external realm of its own creation; and, furthermore, it is the *ego* as related to other real beings, known to it through analogy and experience. By the assistance of all these three classes of relations we hope to be able to climb from the knowledge of *one* finite reality, man, to a true, though limited, knowledge of the Being that is the soul of the great sum of things.

The method we shall employ is nothing new. It

is the method by the use of which all the conquests of science have been achieved. It is, in short, the method of *analogy*. The word is a familiar one; but the *value* of the process called analogical is not very well defined. I shall, therefore, devote the next chapter to an examination of the worth of the results reached when we essay to climb from inner reality, discovered at one point in the universe, to a conception of the inner reality of the whole.

CHAPTER VI.

FROM THE MICROCOSM TO THE UNIVERSE.

For illustration's sake, let us suppose a mariner of ancient times to have been carried, by stress of weather, to a remote land, which had once been the home of a cultivated but now extinct people; and further, let us suppose him to have discovered there various unfamiliar objects. One of these is a globe. To his mind, dreaming still of the earth as a vast extended plain, this seems nothing more than a toy. But his curiosity is aroused by the oddity of its ornamentation; and all at once it occurs to him that parts of it have a resemblance to the mental picture of land and sea that he, as a navigator, has formed for himself.

Further examination discloses additional coincidences. But after a time the resemblances are exhausted, and there remains much that exceeds and much also that contradicts his experience. In view of this, three suppositions occur to him. It may be that the resemblances are purely accidental, and that his own fancy has helped them out, making them appear to be more important than they actually are. Or, secondly, it may be that the decorator knew something of the surface of the earth, and that, having amused himself with this knowledge as

far as it went, he extended his sketch in a purely imaginative way. Or, thirdly, perhaps the maker of the globe knew, not simply as much, but much more than its present possessor; and perhaps, therefore, this seeming toy may be treated as a reliable model of the earth.

As this last hypothesis is the only one that can lead to anything, we will suppose, not simply that our navigator commits himself to it, but that he devotes his life to the verification of it. His limited means admit of his doing this only in a very imperfect and partial way. He cannot circumnavigate the globe; but he treasures every bit of knowledge he can get: he collects the accounts given by other navigators and compares them with his own experience; he brings together all the vague guesses of astronomers and philosophers about the shape of the earth; and thus, by putting this and that together, he arrives at a settled conviction that his hypothesis is correct, though there are many things about it that he can neither verify nor understand. He is obliged, we will say, to end his days without being able to form any satisfactory conjecture as to *how* it is possible that the earth should exist as a sphere. But for all that, his unwavering faith in his model has guided him truly, and enabled him to reach satisfactory and valuable results in many directions.

Now, when a philosopher makes the hypothesis that the little world of which man is the centre is a true and reliable guide to a conception of the relations sustained by the universe to its centre, he acts upon the same principle as our supposed navigator.

Let us imagine a philosopher who has become as deeply imbued with the realistic prejudices of the present age as the old-time navigator was with the geographical prejudices of his. He has, we will say, given himself wholly to the study of science. He has followed with enthusiasm its progressive conquests. He has been completely won over to its method, as he has traced the steps by which one principle after another has been first guessed at, then proximately verified, then simplified, then adopted into a larger generalization. He sees, moreover, that by faithful adherence to its methods, science has obtained such a grasp on the working principles of the world that it has accurately prophesied events while they were still far away in the future. In view of all these achievements he is filled not only with a profound respect for these methods, but also with a feeling of restful confidence in the results to which they lead. Here, he assures himself, is something certain, something proved, something real. In this I have a foundation on which to build a philosophy.

There is nothing to interrupt this impression of finality, this feeling of perfect satisfaction, so long as his attention is confined solely to the agreements of science. But there comes a reaction. For, as a philosopher, he must find a *meaning* in the world; and somehow, the meaning has wonderfully faded out of that which formerly was replete with significance. Intelligence, purpose, morality, have become shadows and illusions. He can find no foundation in his philosophy for poetry or for religion.

He lives in a world of atoms and forces. Units of mass and units of motion, in an endless round of action and reaction, chase each other through his imagination. If he concentrates his attention upon the atom for the determination of the secret of being, he seems to himself like one shut up in an absolutely dark cell. Or, if he tries to contemplate the world as the outcome of an aggregate of homogeneous units in motion, he is revealed to himself as the intelligent centre of an unintelligent universe. He has a boundless prospect, but it is that of an illimitable desert. As a philosopher, again, he demands efficiency. There is nothing in all this unintelligent, undifferentiated immensity for a world of variety and order to rise from. All the efforts of philosophers to deduce the forms and qualities of concrete things from homogeneous atoms and forces are seen to have been as ineffectual as the dreams of perpetual motion.

He reflects, further, that the great object of philosophy is to discover a concept that shall be all-comprehensive, to grasp a central principle which shall enable us to think of the universe as a great organic whole. But in his world of atoms and forces he finds no such principle. Whence, he asks himself, comes this conviction that the world *is* a unity, that it *has* a central, controlling principle? and whence the craving of philosophy to apprehend the totality of things after such a fashion? Must it not be possible to trace this conviction and this craving to some experience, some actually known whole, dependent upon an efficient central princi-

ple, like that demanded for the universe? Such a principle, if it exists in experience, ought to be found at the other extreme of the scale of being from that in which science has landed him. Yet he cannot find it in the camp of idealism; for this philosophy is as clearly the product of abstraction as the one he has had to abandon. He is looking for the antithesis of all abstractions. Nothing less than the fullest, most highly-organized form of existence can serve his philosophic need.

In this strait, an old-time word occurs to him, — the *microcosm*. Not the *ego*, in the seclusion of self-consciousness, — but man the soul and body, man the centre of a little world of which he is the life, the light, and the creator. May not this afford the clew that he is seeking? In this little world he finds the most complete contrast to the world of atoms and forces. There he could discover no centre of causation, but an endless chain of sequences proceeding from nowhere, and tending no whither. Each link of the chain of nature, even in its most complex manifestations, appeared as the equal of every other link in importance and significance. There was an infinitely varied play of forces, endless transformations of groups, and nothing more. But the moment these forces of nature enter the kingdom of man all is changed. The valueless becomes valuable. The aimless is made to serve a definite end. Instead of following each other in a meaningless round, they are disciplined and guided; they become the vehicles of man's thought and the instruments of his will.

He passes in review the constructive work of man in its various departments, — each one of them a marvel of achievement. Personating the race, he sees himself surrounded by a most extensive and wonderful world of adaptations, every ray of which converges to him as its originating source and sustaining centre. Withdrawing into his own personality, he knows himself as the creator and centre of a less extended but no less real world. This, certainly, is no dream of the imagination. This is reality, if anything is real; for in this world he lives and plans and executes designs. Is it not, in fact, the very reality that he is seeking? Does not this picture of the little world of man, more or less clearly defined in the consciousness of every individual of the race, declare itself as the unmistakable origin of the conviction that the aggregate of things is a unity, and that it is governed by one central principle? And if this is the *origin* of the conviction, is it not here also that he should seek for its justification? Is it not reasonable to believe that the world of which the individual is the centre is a diminutive model of the great universe? — that the knowledge that comes through self-consciousness offers to man his one and only opportunity of penetrating below the surface to the inmost reality of things? And may he not, therefore, venture to use the microcosm as a guide to a knowledge of the world, as a student of geography uses a globe to obtain a conception of the earth?

There are many difficulties about such an hypothesis, and through these he must patiently and can-

didly think his way. But first of all he asks himself as to the rationality of his proceeding as a whole. Suppose he does find many resemblances between the microcosm and the universe, is this in itself a reason for believing that the inner principle of the one is also the inner principle of the other? The hypothesis that he has made is not a new one. It is the well-worn one of poetry and religion. He has, it is true, reached it in a different way. He has not instinctively taken it for granted. He has not claimed for it the authority of an inspired revelation. He has rather been driven into it by a process of exclusion from all other hypothetical interpretations of the world. But however he has come by it, he is obliged to recognize it as a view of things that has had much contempt poured upon it. Under the name of anthropomorphism, it has been pronounced to be the antithesis of scientific method. Is it possible to rescue his hypothesis from such imputations by finding for it a truly scientific basis?

It certainly ought to be; for if it is ever scientific to hold that a knowledge of one particular group of organized phenomena furnishes a clew to the nature of another group of phenomena existing on a higher scale, it ought to be possible to refer such a belief to some general principle. We ought to be able to say that experience has demonstrated the fact that the universe is, to some extent at least, a series of repetitions, so that an intimate knowledge of any one organized part of it is, within certain limits, a true guide to the interpretation of other parts of it, and progressively to every part of it. This cer-

tainly is assumed by science; and every step in its advance is a witness to the truth of the assumption.

Up to a certain point the work of science consists in observation, in prying research for the collection of a great number of facts; then comes the work of comparison and classification; then the work of conjecture, in which the imagination has free play; then the process of exclusion, in the course of which many of the suggestions of fancy are set aside as unworthy of attention; then the process of verification for the proof of the surviving conjecture. We are at present interested in that stage of the progress that relates to the formation of hypotheses.

The scientific imagination, though free within certain limits, is not without guidance, and its chief guide is analogy. Having ascertained a principle of limited range, it expands this, by means of the imagination, till the same principle is capable of including a very much wider class of phenomena. Every time it repeats this process it acts on the assumption that the world is a series of modified repetitions; and every time an hypothesis so made is verified the correctness of this assumption receives an additional proof. The results of science thus present us with what has been appropriately called a "hierarchy of principles." Each partial generalization foreshadows a higher one in which it is sooner or later seen to be comprehended. And what is true of principles is equally true of groups of phenomena. The whole science of classification depends upon the fact of repetition with modification, no different scales.

Very recent discoveries have disclosed the existence of such orderly arrangements on different planes where we should least have suspected it. Chemistry, as we know, has been arrested in its all-dissolving progress by certain elements that defy all attempts at analysis, — elements that have, therefore, to be treated as final, absolutely dissimilar substances. Here, if anywhere, we should anticipate that the above-mentioned rule would fail us. But the very remarkable discovery has recently been made, almost simultaneously by a Russian and a German chemist, that these elements are capable of being classified in successive series.

The following very brief and clear statement of this is given by Professor Huxley: "If the sixty-five or sixty-eight recognized elements are arranged in the order of their atomic weights, the series does not exhibit one continuous progressive modification in the physical and chemical characters of its several terms, but breaks up into a number of sections, in each of which the several terms present analogies with the corresponding terms of the other series. Thus the whole series does not run

a, b, c, d, e, f, g, h, i, j, k, etc.;

but

a, b, c, d, A, B, C, D, α, β, γ, δ, etc.,

so that it is said to express a *periodic law* of recurrent similarities. Or the relation may be expressed in another way. In each section of the series the atomic weight is greater than in the preceding section; so that if w is the atomic weight of any ele-

ment in the first segment, $w + x$ will represent the atomic weight of any element in the next, and $w + x + y$ the atomic weight of any element in the next, and so on. Therefore the sections may be represented as parallel series, the corresponding terms of which have analogous properties; each successive series starting with a body the atomic weight of which is greater than that of any in the preceding series, in the following fashion: —

d	D	δ
c	C	γ
b	B	β
a	A	α
w	W + X	w + x + y

This is a conception with which biologists are very familiar, animal and plant groups constantly appearing as series of parallel modifications of similar and yet different primary forms." [1]

The discovery of this order led the Russian chemist, Mendelejeff, to indicate the existence of other elements not hitherto recognized. When he first ranged the known elements in a tabular form he found that a perfectly symmetrical arrangement left, here and there, vacant spaces. He called attention to these gaps, and ventured not only to prophesy that elements then unknown would be found to fill them, but even went so far as to describe in detail what these undiscovered elements would probably be like. Only a few years elapsed before all the

[1] *The Advance of Science in the Last Half Century*, p. 56.

elements thus described were discovered, — the last one about three years ago.

This is only one of the most recent of the marvelous achievements of science, reached by faith in the principle that the universe is a system of orderly repetitions with variations. Other illustrations of the principle, having a closer relation to our problem, will easily occur to the reader. If we wish to find an analogy for the assumption involved in our hypothesis, that the exceedingly limited may reveal the nature of that which is inexpressibly extended, we have only to call to mind the great law of Newton, — that every particle of matter in the universe is related to every other particle, as each of the planets is related to the other heavenly bodies. Following out this law in connection with the atomic theory, we attain to that astounding conception for which science has no rebuke, that a molecule may be a solar system in miniature. Alluding to such a conception, Professor J. P. Cooke says: "A theory which assumes that within the masses of material bodies the motions of suns and systems are reproduced on a scale so minute as to task our power of imagination to grasp the conception, is found to be in complete accordance with all the facts which can be observed." [1]

But there is another aspect of our hypothesis that needs illustration. The extreme simplicity of the relations above instanced may seem to separate them, by a wide difference, from the relations postulated for the interpretation of the inner reality of

[1] *The Credentials of Science the Warrant of Faith*, p. 265.

things. The relations sustained by the human mind to its environment are so complex, so heterogeneous, so hard to be harmonized among themselves, that the thought of using them as a guide to a more extended field of knowledge may well appear extravagant. But even here we are not without a precedent in the methods of science.

The marvel of marvels in nature for complexity and condensation is the egg. The globe of our supposed navigator, though the most elaborate one ever made, is to this epitome of nature's processes as a flint implement to the most delicately constructed mechanism. For in it, by the aid of the microscope, we may trace the whole process of the creation of a higher animal. First, we have the germ, a nucleated cell. This becomes two by a division of itself and by growth. By a repetition of this process it becomes a multitude. The egg then comes to us as an aggregate of homogeneous cells, capable of being still further multiplied and, at the same time, modified into a great variety of classes, having different forms and functions. By these as by a trained army of artisans, each just knowing where to go and what to do, the living organism, that in its unity we call a being, is built up.

Now, in this wonderful process, modern science believes that it has discovered the true key to the history of the development of the whole world of animate and inanimate forms. At the beginning of his book on evolution, Dr. Joseph Le Conte says: "Every one is familiar with the main facts connected with the development of an egg. . . . Now

this process is evolution. It is more, — it is the type of all evolution. It is that from which we get our idea of evolution, and without which there would be no such word." As to the importance of the principle thus made known to us, the same writer says: "The process pervades the whole universe, and the doctrine concerns alike every department of science, — yea, every department of human thought. It is literally one half of all science." And as to its certainty, he says: "The law of evolution is as certain as the law of gravitation. Nay, it is far more certain."

Now let us see to what extent this important principle, suggested by the egg, rests upon analogy. It has been reached, we may affirm, by the comparison of three separate series of forms found in nature. First we have the *taxonomic* series. This is the result of classifying the contemporary forms of animal life on a scale of relative complexity. Beginning with a unicellular organism, we advance step by step till we reach the higher animals, made up of innumerable cells having a great variety of forms, functions, and relations. The members of this series are not a succession of stages proceeding directly one from the other, but a series of completed independent existences living alongside of each other.

The second series is the *phylogenetic* or geological series. This seems to be the history in time of the former. It shows that the simplest organisms came into being first, then those somewhat less simple, and then successively those which were more

and more complex. The members of this series do not appear to be genetically related to each other, any more than those of the first series, but the arrangement of their succession in time gives us the idea of a progressive creation. But now we come to the third, the *ontogenetic* or egg series. For the purpose of comparison, the process that takes place in the egg is marked off into a succession of stages; and the relations which these stages sustain to each other seem to reveal in a wonderful manner the secret of the other two series. Like the taxonomic series, it begins with a single cell, and then, by the gradual multiplication and differentiation of cells, it reaches that unified complex of organs, a higher animal. In this series all the members *are* genetically related, that is, they are stages of being that proceed directly the one from the other.

This seems to explain the geological or historical series, because its members are similarly related to each other, both in the order of time and in the order of complexity. And it seems to explain the classification series, and to unite this with the historical, by showing how a series that has been progressive in time may in its results present the aspect of an aggregate of unprogressive fixed forms. For the egg series, although progressive, gives rise all along its course to forms that remain as immovably fixed as the different species of animals that we see around us. Different classes of cells, as we have seen, are evolved; and although some of these give rise to new classes, some of them remain to represent the particular phase of the organism that they

introduced. The same is true of organized groups of cells. There is a continual branching and re-branching. But in the completed organism the various stages of differentiation continue to be more or less perfectly represented by classifiable cells and groups of cells.

More remarkable still do these coincidences appear when it is further observed that the earlier stages of the egg series of a higher animal bear a striking resemblance to the more mature stages of lower animals. This is perhaps most clearly illustrated by a comparison of the successive embryonic stages of the human brain with the mature brain of animals lower in the scale. The first observable form of the human brain is less elaborate than that of the ordinary fish. In the next stage it resembles that of a fish; then, by the relative increase of the cerebrum, it reaches the reptilian stage; by continued growth, it partly covers the optic lobes and resembles the brain of a bird; then it wholly covers the optic lobes, and, partially overspreading the cerebellum and the olfactory lobes, may be called a mammalian brain; and finally, it covers and overhangs all and becomes a human brain. In view of these facts Dr. Le Conte sums up the argument for evolution as follows: —

"Now why should this peculiar order be observed in the building of the individual brain? We find the answer, the only conceivable scientific answer to this question, in the fact that *this is the order of the building of the vertebrate brain by evolution* throughout geological history. We have already

seen that fishes were the only vertebrates living in Devonian times. The first form of brain, therefore, was that characteristic of that class. Then reptiles were introduced; then birds and marsupials; then true mammals; and lastly, man. The different styles of brains characteristic of these classes were, therefore, successively made by evolution from earlier and simpler forms. In phylogeny this order was observed because these successive forms were necessary for perfect adaptation to the environment at each step. In taxonomy we find the same order, because, as already explained, every stage in advance in phylogeny is still represented in existing forms. In ontogeny we have still the same order, because ancestral characteristics are inherited, and family history recapitulated in the individual history." [1]

When presented in this form, the reasoning that connects the egg series with the other two does not at first sight seem to rest altogether upon analogy. But a close inspection of the argument will, I think, convince us that it has very little else to support it. The order of the thought seems to be this: First, we compare the three series and find a close resemblance in the succession of their stages. Second, knowing that the stages in the egg series are genetically related to each other, we *infer* that those of the geological series are similarly related. Third, by a reflex argument, we infer that the *reason why* the members of the egg series are genetically related is found in the fact that those of the geological series

[1] *Evolution and its Relation to Religious Thought*, p. 150.

were *previously* so related. Now, aside from analogy, what support do we get for the first inference?

If investigation showed that similar conditions affected the two series, we could at once establish our inference on the principle that like causes produce like effects. But this is not the case. The conditions in the one case have no resemblance to the conditions in the other; at least, they have no resemblance to the conditions that are adduced as the chief cause of the original order. Conflict with and adaptation to environment are said to have originated the race series. But the environment of the individual embryo is in every respect unlike that of the unprotected, militant organism. In reasoning from the egg series to the geological, therefore, we have nothing to go upon but analogy, that is, a similarity of order existing under external circumstances that are in every way dissimilar.

Let us examine the second step. Having, on the strength of analogy, made the hypothesis that the members of the geological series are genetically related, how can we, on the basis of this hypothesis, scientifically deduce the phenomena of the egg series from it? It is said that the principle of heredity supplies us with the means of making such a deduction. But let us further ask to what extent does the principle of heredity, as thus applied, rest upon inference from analogy? The answer must be, *almost entirely*. We know nothing about the principle of heredity, as related to the remote past, except inferentially and analogically. So far as direct

knowledge of the law of heredity is concerned, it remains such a mystery, from beginning to end, as to make the exclusion of almost any hypothesis with regard to its action impossible. But the same ignorance of its laws makes it impossible to deduce results with any certainty from it. The analogies under discussion have contributed many suggestions about the law of heredity. But *from* the law of heredity, independently of these analogies, we get very little assistance.

The elder Agassiz, who did so much to prepare the way for the evolution hypothesis, brought together and classified the materials in all three of the above-mentioned series, and, moreover, made it the great work of his life to demonstrate the close relationship in which they stood to each other. He even went so far as to affirm that the observed repetitions were such as to render the embryonic series a true key to classification in the other two. But he did not advance to the position that species are derived from each other by natural descent, because there was nothing in the known principles of heredity to compel such an inference. The connection between the three series was, for him, one that had its origin and reason in the mind of the Creator. There was a uniformity of plan and method, but not an interdependence between the series, or a derivation of one from the other.

In short, it seems to me unquestionable that, in so far as the modern theory of evolution gains support from embryology, it is indebted entirely to analogical relations existing on widely different scales, and

under circumstances that seem to be wholly unlike each other. I am not, be it understood, attempting to disparage the argument thus derived. I wish only to show how much influence analogy has in determining our beliefs; and to what an extent the most complex relations may be employed as a key to the understanding of other complex relations from which they are very widely separated. Nor, on the other hand, am I trying to make it appear that the analogical argument is the only one to which the hypothesis of evolution refers for support. When once the hint of a genealogical relationship between species had been furnished by the egg series, scientific research busied itself to find corroborations of this hint in other and widely different relations of things; and although this research failed to discover much that it expected to find, and found in many cases that which seemed, at first sight, the contradiction of the hypothesis it was trying to verify, yet so many and weighty were the converging evidences in its favor that evolution was tentatively established.

Now let us return to our own hypothesis, that the conscious relations which man sustains to his environment furnish us with a key for the interpretation of the inner reality of the universe, — a key that becomes more and more useful as science discloses more fully the nature of our environment. Let us observe, in the first place, that we actually *do* use these relations, known only to self-consciousness, for the interpretation of the inner reality of a very considerable and very important part of the world, and that experience indorses this use.

Probably no statement with regard to the realities of the external world would be generally considered safer than that which affirms that the individual is surrounded by a multitude of living, thinking, energizing beings like himself; and probably no kind of knowledge would, at first sight, seem to us more *direct* than that which we have of the friends and neighbors with whom we are daily brought in contact. But reflection shows us that all the knowledge of others that we possess is grounded upon analogy, that is, upon a never-ending succession of analogies. Not that our knowledge of persons is peculiar in this respect. All our connected comprehension of the world is attained in the same way. Every new object presented to sense, and every new idea presented to thought, must, to use Mr. G. H. Lewes's expression, "be *soluble in old experiences*, be recognized as like them; otherwise it will be unperceived, uncomprehended. A conception which is novel, or largely novel, is unintelligible even to the acutest intellect; it must be prepared for, *pre*-conceived; and by the exhibition of its points of similarity and attachment with familiar conceptions, its congruity with these may become the ground of its acceptance." [1] Our beliefs with regard to the nature of what we call inanimate things are gained by comparing inanimate things with each other; those that concern living things are reached by comparing living things with each other; and those that have respect to conscious beings come by comparing conscious beings with each other.

[1] *Mind as a Function of the Organism*, sec. 77.

Except for our own self-consciousness we could know nothing whatever of self-consciousness or intelligence in other beings; and our progressive knowledge of them is attained, first, by a series of analogical assumptions or hypotheses, which may properly be described as prejudices; and, second, by the verification or correction of these by farther experience. That this process is, to a great degree, an unconscious one, makes no difference as to its nature. When systematically carried out, its method is identical with that by which all scientific truths are attained. Certain general conclusions with regard to mankind result from it. First, that all members of the human race are like ourselves, and like each other; second, that no two members of the race are like each other; and, third, that the least developed can attain only to a very limited and imperfect knowledge of the most developed.

In other words, experience indorses our use of self-knowledge as the ground of interpretation for conscious beings widely separated from us, but at the same time lays upon us the necessity of wide blank spaces in our conception, to be filled up tentatively by the imagination. The more closely connected two persons are by birth, training, and temperament, the fewer the blank spaces, the more complete and reliable the conception formed. Yet those who are most widely separated find, in virtue of their common humanity, grounds for a fairly probable judgment of character.

But this is only the beginning of the analogical use to which we put our inner knowledge of self.

All our interpretation of the motives of the lower animals proceeds upon the same principle as our interpretation of men. In our critical moments we may be inclined to deny that a shepherd-dog has any community of nature with man. But in the synthetical, practical judgments of his shepherd-master he figures as a slightly modified human being. I think we may affirm that our success in dealing with the more intelligent animals depends upon the faithfulness and discrimination with which we apply this self-derived analogy. "Put yourself in his place" is, within certain limits, as good a maxim for the regulation of our conduct toward a horse as toward a man. From the more intelligent animals we descend, by regular gradations, till we reach those that are lowest in the scale of organization. The structure of the apparently brainless ant, with its plurality of coördinate nerve centres, seems at far too great a remove from the human organism to afford the slightest ground for a trustworthy analogy. But when we study its adaptations and modifications of means to ends, we are, in spite of our knowledge of structure, convinced that ants not only have intelligence, but that they have an amazing amount of it. And when we drop still lower to contemplate the behavior of the apparently structureless amœba in search of its food, we cannot refrain from applying the same analogy for the interpretation of what we behold.

Now, then, if we may successfully reason analogically from one form of life to another on a descending scale, why not, with equally good results, on an

ascending scale? On the one hand we are under the necessity of continually diminishing the conception of mind with which we set out, and on the other we have to expand this conception. In the one case the imagination has to supply limitations, and in the other it has to exert itself to remove them.

An objection which readily suggests itself to the ascending application of our analogy may, at first sight, seem to be conclusive. Man is the most highly organized being of whom we have any direct knowledge. He represents the limit of organization. The swarm of lower animals, in the midst of their diversity, present some resemblance to man. Even the microscopic, structureless rhizopod is of the same substance (protoplasm) that in man supports consciousness. When, therefore, we try to understand these lower orders by reference to ourselves, we have a verifiable community of substance to support us; but when we try to carry the analogy higher, we have nothing whatever but fancy to build upon. The following expression is given to this criticism by Mr. G. H. Lewes: "The universe assuredly exists, but it does not live; its existence can only be identified with life, such as we observe in organisms, by a complete obliteration of the specialty which the term *life* is meant to designate. Yet many have not only pleased themselves with such a conception, but have conceived the universe to be an organism fashioned, directed, and sustained by a soul like that of man, — the *anima mundi*. This is to violate all scientific canons. The life of a plant organism is not the same as the life of an animal organism; the life of an

animal organism is not the same as the life of a human organism; nor can the life of a human organism be the same as the life of the world organism." [1]

It is difficult to answer the charge that the hypothesis of an *anima mundi* violates *all* scientific canons; for where no particular offense is specified, one is at a loss how to begin. But we will do our best to defend the positive view, and show that the hypothesis in question is in perfect accord with scientific procedure. Let us remember, in the first place, that science has demonstrated to us that the physical basis of mind is the same as the physical basis of the universe, that the various forms of energy in the world are interchangeable. The great mystery is that *any* form of that which we call matter or force can support consciousness or intelligence. Experience, however, teaches us that a particular combination called protoplasm does support mental activity. But is it scientific, or unscientific, to draw from this fact the conclusion that without protoplasm there can be no consciousness?

All we can scientifically affirm is that the one series or order of conscious beings with which we are acquainted is protoplasmic. But as Dr. Cope very truly says: "We are not necessarily bound to the hypothesis that protoplasm is the *only* substance capable of supporting consciousness, but to the opposite view, that the probabilities are in favor of other and unspecialized, but unknown, forms of matter, possessing this capacity." [2] Nor need we, as Dr.

[1] *The Physical Basis of Mind*, sec. 9.
[2] *The Origin of the Fittest*, p. 417.

Cope does, refer this possibility to other planets. We may postulate another series or order of beings that repeats the phenomena of consciousness on a different scale and therefore under different circumstances. Where we find such a similarity of results as appears in comparing the operations of man with the operations of nature, it is reasonable and it is scientific to assume hypothetically the presence, in both cases, of a similar cause, operating under different conditions.

It is unquestionably true, as Mr. Lewes says, that the life of an animal organism is not the *same* as the life of a human organism, and that this last is not the same as the life of the world organism; but it does not follow that we violate any scientific canon by using the one for the interpretation of the other. Science invariably prosecutes its physical quests by the use of imperfect analogies. The atomic theory is the foundation of chemistry and physics. But what is the atom? It is a purely hypothetical entity, conceived of in the first instance by means of a very crude analogy. It is imagined as an infinitesimal particle of matter, with most of the known qualities of matter thought out of it. In fact, there is no quality of matter that in some of its relations does not have to be denied of the atom; and yet, by the use of this concept, science has accomplished great things. The general truth to which this points is thus expressed by Stallo: "The steps to scientific as well as to other knowledge consist in a series of logical fictions which are as legitimate as they are indispensable in the operations of thought,

but whose relations to the phenomena whereof they are the *partial* and not unfrequently *merely symbolical* representations must never be lost sight of." [1]

This may seem to be surrendering all our claim to the reality of the results to which our method brings us; but it is not. By the use of such symbols we reach a knowledge of *relations* which is absolutely certain. Professor J. P. Cooke thus states the case with regard to the atomic theory: "Our atoms may be mere fancies, I admit, but like the magnitudes we call waves of light, the magnitudes we have measured and called atoms must be magnitudes of something, however greatly our conceptions in regard to that something may change. Our whole atomic theory may pass, the words *molecule* and *atom* may be forgotten; but it will never cease to be true that the magnitude which we now call a molecule of water consists of two of the magnitudes which, in the year 1872, were called atoms of hydrogen, and of one of the magnitudes which, at the same period, were called atoms of oxygen." [2]

The same writer, in another connection, says of the undulatory theory of light: "There cannot be a question that the values obtained are real magnitudes, . . . the definiteness of the results gives us the strongest assurance that our theories contain an element of truth, although the truth may be *clothed* with much error." But of this same theory he affirms that it "demands postulates which

[1] *Concepts of Modern Physics*, p. 296.
[2] *The New Chemistry*, p. 239.

even the wildest imagination cannot reconcile with common sense."[1]

Now let us remember that the great object of our inquiry with regard to the Supreme Being — the object which removes it from the category of aimless speculation — is the ascertainment of the *relations* which such a Being sustains to the world of which we are a part; and the *relations* which we as rational moral beings sustain to Him. And as the value of any scientific hypothesis is measured by the degree to which it can be depended upon in practice, so the ultimate test of the value of our conceptions of God must always be the appeal to life. We cannot for a moment think that our humanly formed ideas of Him are anything more than symbols. They cannot give a complete knowledge of Him, but only certain aspects of his being and character, certain relations which He sustains to us, — relations of which our experience is, for all practical purposes, a sufficient measure.

But we are not on this account to jump to the conclusion that the symbols are to be despised. They are, to invert the order of Stallo's expression, as *indispensable* as they are legitimate. We cannot move a step without them. Take them away and there is no reality left. There cannot be relations without things to be related; and in all such cases, where the hypothetical reality leads to the discovery of verifiable relations, we know for a certainty that our conception of this postulated thing or being is true in some very important respects. We can-

[1] *The Credentials of Science the Warrant of Faith*, p. 220.

not substitute at random any other symbols for those that have been thus verified. At any given time they constitute the nearest possible approach to reality. It is none the less true, however, that they are open to modification, that they have reached their position through the instrumentality of other less perfect symbols, and that there is every reason to believe in a continuance of the process to which they owe their existence.

Our thought, like our life, is a moving equilibrium; and the same practical problem confronts us in every department of it, namely, to hold firmly our faith in that which has been established by experience, while keeping our minds open for the reception and assimilation of those new aspects of reality that further experience is sure to bring. In politics, in social adjustments, in the natural sciences, in religion, it is the same. Without stability, we cannot prosper in any of these; but it must be the stability of a growing organism, not that of a stone.

Let this suffice for a general setting forth of the legitimacy and value of the analogical method. We must now turn to a defense of that particular application of it that we have, as it were, drifted into. At the close of the last chapter we said that the basis of our analogy would be the complex *ego* of experience, — "the *ego*, plus *all* the relations that it sustains to other objects." And already, by way of illustration, we have applied our method in the use of one particular class of relations, — those, namely, which the mind of man sustains to the physical organism which is at the same time the

vehicle and the expression of his personality. It will probably have occurred to the reader that the use of this particular set of relations, if it can be justified, renders unnecessary, or even impossible, the use of any other. The relations which the *ego* sustains to the living tissues of the body and to its various organs and faculties seem to have very little in common with the relations that it sustains to other intelligent beings; and when we come to the relations which exist between it and inanimate things, the difference appears to be radical and quite irreconcilable.

If, therefore, we attach ourselves to the first for a conception of the relations that the Supreme Being sustains to the universe, does not this choice absolutely exclude the use of the other two sets of relations, which we must regard as equally real? And have we, it may be further asked, been guided to this choice by anything more than a caprice? The view which it opens before us is not one with which we have been made familiar by traditional thought; it is, in many respects, the antithesis of that thought. The quality of externality that characterizes the relations that we sustain to inanimate things has characterized also the time-honored conception of the relations that the Supreme Being sustains to the world as a creator; and the relations existing between human individuals have formed and dominated all our thought of God as a moral governor. Our religious beliefs have become identified with these methods of conception; and these symbols are so interwoven with our religious experience

as to have become their very framework and support. How, then, without traversing principles laid down in this very chapter, are we to substitute other symbols for those that have been so thoroughly indorsed, as to their validity, by use?

These questions we shall try to answer in succeeding chapters.

CHAPTER VII.

MECHANISM TRANSFORMED.

When we were trying to establish the propriety of extending our knowledge of living organisms to the interpretation of the universe, we took the ground that the limits of organic being are not necessarily coincident with the limits of protoplasm. It is legitimate, we argued, and in accordance with scientific procedure, to assume that other forms of matter *may be* the vehicle and expression of other forms of being, organized on a far more extended scale than anything in the protoplasmic order. We therefore made the hypothesis that the universe is the manifestation of a Being; and that every part of it bears somewhat the same relations to this Being that the various members of a human body bear to the *ego* that they serve and represent.

Now, before we venture on the justification of this particular hypothesis, it may be well for us to consider, as widely as possible, the bearings of our principle. What other equally legitimate application may it have? And do any of these applications involve absurdities? I think there can be no question that it is equally open to us, when once we have broken through the protoplasmic order, to extend our analogy on a descending as well as on an ascend-

ing scale. If we may believe that a soul, at the centre of the universe, is the efficient reality of the great sum of things, why may we not believe that a soul is also the essential reality of a compound molecule? And why, when we reach the simple atom, the ultimate unit of science, should we not postulate an atomic soul as the inner *elementary* reality of the world of things? It might, indeed, be alleged that the two cases stand on an entirely different footing, in that one presents us with an infinite complexity of adjustments, which everywhere suggests an organism; while the other, the ultimate unit, is assumed to be absolutely simple.

But let us ask ourselves, what do we know about the simplicity of elementary atoms? All we can say of them is that they are the least complex things of the world. They are assumed to be ultimate only as *indivisible*. They are units; but their unity may involve an inner complexity, — a complexity of nature. And, in fact, the phenomena of chemistry oblige us to affirm such a complexity. For how can absolutely simple elements, when brought together, give rise to a great variety of responses or reactions? Every hypothetical unit of chemistry has unmeasured possibilities of operation, according to its environment. If, therefore, complexity of behavior is any indication of complexity of constitution, we have the most abundant evidence that the simplest elements of the world are only relatively simple; that they are, in fact, of many different kinds, endowed with radically different natures.

There is, indeed, a dream of chemistry, in which all the differences of things are imagined as arising from differences of position and form and grouping, brought about by a varied play of forces among the atoms of one homogeneous substance. But this is really a dream of physics and not of chemistry. The phenomena of isometric compounds, it is true, show that the very same atoms may give rise to molecules of different substances having wholly different qualities, when they are arranged in different relations of position to each other. But unless there were an inner response of such atoms, their differences of position could not, in any case, give rise to chemical phenomena; that is, to that mysterious union in which different atoms merge all their distinctive characteristics in the formation of a new substance having no resemblance whatever to its constituents. As Professor Cooke has expressed it, "If nature were made out of a single substance, there would be no chemistry, even if there could be intelligences to study science at all. Chemistry deals exclusively with the relations of different substances." [1]

So far as natural phenomena are concerned, therefore, I think we may affirm that it is just as legitimate to entertain the hypothesis that the elementary realities of the world are atomic souls, as it is to assume that there is one all-embracing, Supreme Being at the head or centre of the universe. And in what follows I shall endeavor to show that both these hypotheses are not simply legitimate, but

[1] *The New Chemistry*, p. 14.

that the progress of thought, in science as well as in philosophy, has rendered them indispensable.

Are we, then, about to abandon one side of reality, and to deny that there is any such thing as matter? On the contrary, having with much pains laid the foundation of an all-comprehensive realism, we mean to build squarely upon it; and we unequivocally affirm the *reality* of that which has been, and will undoubtedly continue to be, called matter. But we wish, at the same time, to persuade the reader that the quality of an atom which we may call its materiality is only one aspect of its reality, and not the most essential or vital one. It is no part of our endeavor to displace the concept *material atom*. That concept has had, and must continue to have, its legitimate and indispensable uses, even though we fully recognize its inadequacy.

Let us look, for a moment, at the origin of the word *matter*. I do not mean its formal etymology, but the necessity of thought that called it into existence. Things naturally fall, in our experience, into two great classes. On the one hand are ranged those that seem to be centres of spontaneous activity and originating power, and on the other those that appear to be absolutely passive. This distinction runs all through our thinking. We cannot do without it. Always it is the *man* who works and effects the changes, it is the *material* that is worked upon and changed. We cannot abandon this way of regarding things, because clearness of thought is attained only by making sharp distinctions. The inertness of matter is a palpable fact as related to

many of our dealings with it; and this fact we must express by some word, even though we know that this word does not embody the exact truth. We pursue identically the same method when we have to express some of the most familiar relations of space. For instance, before the days of science, men accustomed themselves to call certain portions of space *empty*, to distinguish them from certain other portions that were occupied by tangible objects. But now it has been demonstrated that what we call emptiness is, in reality, only a somewhat modified form of what we call fullness. None the less, however, do we continue to speak of *empty* spaces. The scientific truth is an all-important one in its place, but it is quite out of relation to the special distinction that the requirements of living make it necessary for us to express when we use the word *empty*.

So it is with regard to the word *matter*. Even though we should succeed in demonstrating that matter is not the absolutely passive, inanimate thing that it appears to be, this would have no bearing upon the popular or even upon the purely scientific use of the word in its old signification. For however clearly science may recognize the fact that its solid, impenetrable, inelastic atom is only a symbol derived from a crude and one-sided conception of the true nature of matter, it may nevertheless be useful, for a long time to come, to treat it, in some connections, as if it were the very thing that it is assumed to be.

The position here taken, let it be observed, is in

advance of that contended for in the last number of this series. There it was said to be legitimate to use a single aspect of a thing, in certain connections, as the representative of its full reality. Now we have to recognize that different aspects of one and the same thing, different abstractions from a given reality, may be continued in use at the same time for the exploration of different fields of thought. The attainment of a higher point of view, the discovery of a concept lying nearer to the heart of things, does not necessitate the abandonment of the lower point of view, or the cruder concept. I have called particular attention to this, because we have now to exhibit the relation that the concept *mechanism*, retained in popular thought and in the science of physics, sustains to the concept *atomic soul*, made use of in the higher ranges of science and in philosophy. Or, to put it in other words, we have to show why it is necessary to think of the universe as a living organism, every atom of which has a spiritual nature, while at the same time we continue to treat it, in other relations, as a vast machine.

The justification of the concept mechanism is to be found in the history of its experimental use. It has been practically tested, first in ordinary life, and then in the combinations of science. By its aid, the science of physics has sprung into being. It has been to the explorer of nature's instrumentalities what vessels have been to navigators. We may say that without it we should never have had an organized science. And, further, we have to say that now it is just as useful, just as indispensable, and just as

intolerant of the intrusion of other views as it ever was.

Even though our hypothesis of a universally animated nature should be established beyond a doubt, the physicist would have no occasion to take account of it. While prosecuting his particular quest, he not only has no need to avail himself of the analogies derived from the relations which spiritual beings sustain to each other, but he is debarred from paying any attention to such relations by the requirements of his work. The inventor of machinery, whose mind is teeming with mechanical details that are constantly changing their forms and their relations to each other, would not advance his work by turning his attention to that other aspect of the same process that is represented by nerve-cell combinations; and the compositor who should neglect his type-setting to criticise the treatise that he has to set up for printing would not be a valuable man in his place. Just so the student of physics who does not adhere closely to the external aspects of the phenomena that he is investigating betrays the trust for which he is specially responsible.

The very same is true of that familiar form of anthropomorphism that concentrates attention upon the *external* aspects of the relations that the Supreme Being sustains to the universe. In the symbolism of this view, the world is divided into mind and mechanism, and the action of the former upon the latter is construed after the analogy of man's relations to the machines that he invents and superintends. Such a conception has its legitimate place.

It represents clearly and forcibly one very important aspect of reality. It makes the thought of God, as the designer, creator, and protector of the world, one that may be easily grasped. And, furthermore, in so far as the world is rightly conceived of as a mechanism, such a symbolism represents the truth. All the actual machinery of our experience, from which the idea of the world as a mechanism is derived, is the product of mind. Every machine appears, externally, to be a complex of relations between inanimate things; but before it took this form, it was a complex of relations between nerve cells and fibres, the living instruments of man's inventive spirit. When, therefore, we look upon an elaborate piece of mechanism, we may affirm that it *is* human mind expressing itself in outwardly embodied forms.

Metal and wood and belting do not constitute a machine, any more than printer's ink and paper constitute a treatise. All the relations of materials and of parts that really *are* the machine have had their beginning in the mind of some man; and, having once existed there, they are made to express themselves in external forms, just as the ideas that make a treatise assume, for useful ends, the guise of ink and paper. In short, the idea of a machine that is not the product or expression of mind is a pure abstraction. And the mechanical aspect of nature, taken by itself, is unintelligible. It is like part of an inscription found on a broken slab: it has no meaning till we supplement it with the idea of mind; then the meaningless becomes intelligible.

We know that we have found the other half of the slab, because this justifies its relation to the first half by making sense out of nonsense.

But valuable as the symbolism thus derived is, I have now to show that the mechanical explanation of nature is as inadequate to serve the necessities of science, as the thought of a God external to things is to meet the requirements of theism; that the one, as the other, demands a symbolism that shall express more comprehensive relations.

We will consider the case of science first; and then we shall be able to see whether the wider concept that meets its wants can be successfully applied to those of philosophy and theology. The insufficiency of the mechanical theory to which I shall first direct attention grows out of the logical development of that theory itself. It grows out of it through the application of that general principle of science known as *the law of continuity*. This law is the assumption that the order that *has been* is the order that *will be*, — that the relations known to exist within the range of our experience exist, in some more or less modified form, under similar circumstances, beyond our experience. It is, in fact, another name for the principle of the uniformity of nature. All the great generalizations of science are based upon it. That pan-mechanical idea of the universe that we have already considered is a product of it. So, also, is the doctrine of the conservation of energy, and that of the transmutation of forces. These theories have been gradually established by a long succession of discoveries, each one

of which has enlarged the field of a principle once thought to be limited in its application. Each new discovery has lessened the probability that the principle in question has any limit at all. And so the mind has been gradually coerced into the belief of its universality.

It was easy, as we have seen, to confuse this idea of universality — of all-extensiveness — with the closely related idea of all-comprehensiveness. But the falseness of this inference was soon made apparent by the fact that mind was thus excluded from the world. Mind was excluded, not because it appeared to be unnecessary for the explanation of the world, but because there was no longer any room for it. In the mechanical sequence, the energy of each physical change was seen to be taken up in producing its physical effects; there was none left over, at any point, to account for mental phenomena. But mental facts could not be altogether ignored. Hence the hypothesis that there are two parallel sets of phenomena, intimately associated, but not connected as cause and effect. The physical facts, it was said, go along absolutely sufficient to themselves; and the mental facts, with a like independence, go along by themselves.

This conception, which strongly suggests the old one of a "preëstablished harmony," has taken on many forms under modern philosophical treatment. Professor Bain and Mr. Herbert Spencer are essentially agreed in their representation of the twin series as *one*, that presents to our apprehension two aspects. Mr. Spencer calls feeling and nervous

action "the inner and outer faces of the same change." But Professor Bain further calls attention to the fact that this two-sidedness is limited, in our experience, to a special class of physical sequences. "If," he says, "all mental facts are at the same time physical facts, some one will ask, what is the meaning of a proper mental fact? Is there any difference at all between mental agents and physical agents? There is a very broad difference, which may be easily illustrated. When any one is pleased, stimulated, cheered by food, wine, or bracing air, we call the influence physical; it operates on the viscera, and through these upon the nerves, by a chain of sequence purely physical. When one is cheered by good news, by a pleasing spectacle, or by a stroke of success, the influence is mental; sensation, thought, and consciousness are part of the chain, although these cannot be sustained without their physical basis. The proper physical fact is a single, one-sided, objective fact; the mental fact is a two-sided fact, one of its sides being a train of feelings, thoughts, or other subjective elements. We do not fully represent the mental fact unless we take account of both the sides." [1]

In both these cases, it will be observed, mental phenomena are produced, but in the one case they are the result of *antecedents* that have no mental side. But how shall we account for the difference? If there is but one fact, why should it have two sides in certain special cases and only one in all the rest? The special case points to some special cause,

[1] *Mind and Body*, p. 133.

but under the purely mechanical view there is no such cause; for mental phenomena are nothing more than the concomitants of physical changes.

This consideration led Professor Clifford to make the very hypothesis that we are advocating. To avoid the assumption that acts of consciousness, occurring only here and there in connection with physical changes, are creations out of nothing, he supposes that consciousness, in some rudimentary form, is a necessary characteristic of all matter in motion; and that this, in organisms of great complexity, gives rise to that which we call mind. He says: "The only thing that we can come to, if we accept the doctrine of evolution at all, is that even in the very lowest organisms, even in the amœba which swims about in our own blood, there is something or other, inconceivably simple to us, which is of the same nature with our own consciousness, although not of the same complexity. That is to say (for we cannot stop at organic matter, knowing as we do that it must have arisen by continuous physical processes out of inorganic matter), we are obliged to assume, in order to save continuity in our belief, that along with every motion of matter, whether organic or inorganic, there is some fact which corresponds to the mental fact in ourselves." [1]

To one who has not considered attentively the phenomena of nature as an indefinitely extended series of gradations, such a conclusion as this will seem a simple absurdity. Does it not involve the

[1] "Body and Mind," p. 731, *Contemporary Review*, December, 1874.

reversal of all our common-sense judgments about things? Are not rocks and earth and metal the antithesis, in every respect, of mind? Is fire made of atomic souls? Is all the dust and corruption of the world to be thought of as alive, or capable of life? A thousand such questions, starting up from as many pre-judgments about the nature of things, press in a motley throng to hustle such a conception out of the companionship of sane ideas. But if the reader to whom it is a novelty will have patience, I think he will confess that there is a good deal more to be said for it than at first sight appears possible.

In the first place, by way of getting such an objector into a receptive mood, I will call attention to the fact that the law of continuity has been justified in a great number of cases, which, at first, seemed quite as unpromising as the one before us. In treating of this law, Dr. Jevons makes the following general remark: "One common result of the progress of science is to show that qualities supposed to be entirely absent from many substances are present, only in so low a degree of intensity that the means of detection were insufficient. . . . We are rapidly learning that there are no substances absolutely opaque, or non-conducting, non-electric, non-elastic, non-viscous, non-compressible, insoluble, infusible, or non-volatile. All tends to become a matter of degree or sometimes of direction."[1]

In illustration of this tendency, the same writer

[1] *The Principles of Science*, by W. Stanley Jevons, LL. D., chap. xxvii.

adduces, among other examples, the following: Newton believed that most bodies were quite unaffected by the magnet; Faraday and Tyndall, on the contrary, have rendered it very doubtful whether any substance whatever is wholly devoid of magnetism. So with regard to electricity; the inconceivable rapidity with which an electric current passes through pure copper wire, when compared with the apparently complete manner in which it is stopped by a thin partition of gutta-percha, seems, at first sight, to demonstrate an absolute diversity of nature, as regards electricity, in these two substances. And for a long time it was believed that electrical conductors and insulators formed two opposed classes of substances. But Faraday demonstrated that these were but the extreme cases of a chain of substances varying in all degrees in their powers of conduction. Even the best conductors, such as pure copper or silver, offer some resistance to the electric current, while other metals have considerably higher powers of retardation. And, on the other hand, the best insulators allow of an atomic induction which is the necessary antecedent of conduction. Hence the inference that, whether we can measure the effect or not, all substances discharge electricity more or less. Another very remarkable case of unsuspected continuity was revealed when it was successfully shown that the liquid and gaseous conditions of matter are only remote stages in a continuous course of change.

Further illustration would not help us to understand the principle; and as to the number of such

unexpected verifications of the law of continuity, it is sufficient to say that they have made it necessary to almost reverse the rule laid down by Newton on the subject. "Those qualities of bodies," he held, "which are not capable of being heightened and remitted, and which are found in all bodies on which experiment can be made, must be considered as universal qualities of all bodies." But, in the light of more recent discovery, Dr. Jevons declares the contrary to be more probable; namely, that "qualities variable in degree will be found in every substance in a greater or less degree."

Another consideration that ought to make us tolerant of seemingly wild hypotheses, in the application of this law, is the fact that, in most of the cases where a given property has been proved to belong to a great number of substances in varying degrees, this property has first attracted attention by manifesting itself in a conspicuous and intense manner in some particular substance. Owing to this, it has often been the case that such a property on its first appearance has been regarded as the isolated peculiarity of this substance. "Every branch of physical science," says the author above quoted, "has usually been developed from the attention forcibly drawn to some singular substance. Just as the loadstone disclosed magnetism, and amber frictional electricity, so did Iceland spar show the existence of double refraction, and sulphate of quinine the phenomena of fluorescence. When one such startling instance has drawn the attention of the scientific world, numerous less remarkable cases of the phe-

nomenon will be detected, and it will probably prove that the property in question is universal to all matter."

Carrying these general considerations with us, let us now attack the problem in detail. Mind, it is said, has certain characteristics that separate it absolutely from matter. Is this true? It may be that mind and matter, though so sharply contrasted in our thought, are not mutually exclusive. It may turn out, as it has in so many other cases, that each shares, only in different degrees, the *essential* characteristics of the other. The first quality of matter to be questioned shall be the invariability of its responses to external influences. The laws of matter, we say, can be accurately ascertained, so that, when we have discovered how a given combination of substances *has acted* under certain well-defined circumstances, we know exactly how it will always act. The circumstances being the same, there will be no shadow of variability in its behavior. Mind, on the contrary, is characterized by an indeterminate element. It has within it a principle of freedom, or self-determination. Its action cannot be certainly predicted.

Starting from the side of matter, we have little difficulty in showing that the particular characteristic which we have regarded as distinctive of it is shared by mind. The operations of mind are to a very great extent determined from the outside. They are for the most part governed by a routine as rigid as that of operations that we call purely mechanical. Even when we confine our attention to

the most complex manifestation of mind, we have to recognize the fact that individual human beings differ very widely as to the predominance of self-determination in their behavior. And if we follow down, step by step, the scale of animated existences, we find ourselves led, by almost imperceptible stages, to a point where it is difficult to say whether what we behold has an indeterminate element or not.

Should we not state the case more exactly, then, if, instead of saying indeterminate action is a distinguishing peculiarity of mind, we should say, *self-determination is a characteristic of the higher forms of mind?* We are not trying to show that an atom is possessed of *all* the qualities that characterize the most highly developed human mind, but that it may be possessed of certain fundamental qualities that belong everywhere to mind as such. Self-determination, we hold, is not a necessary concomitant of mind. It may be only a characteristic of its more complex forms. New qualities make their appearance all along the course of evolution.

What, then, we may very properly be asked, are the fundamental qualities that everywhere distinguish mind as such? We will venture to say that *spontaneity of action* and *consciousness* are essential attributes of every form of mind. By *spontaneity* I do not mean movement in the absence of an external stimulus, but movement from within in response to an external stimulus; I am thinking, in fact, of that class of movements that are made known to us in the transformations of chemistry. When matter is moved in bulk by an outwardly

applied force which does not affect the inward constitution of its molecules, there is nothing, it seems to me, to suggest mental action; but when a compound molecule is broken up, and its constituent atoms seek and enter into new combinations in response to a changed environment, there is something that closely resembles psychical action.

It is certainly significant, in this connection, that eminent physiologists are unable to agree as to where, on the scale of existences, psychical action ends and chemical begins. For instance, M. Charles Richet affirms that "the laws of irritability act in all their simplicity and rigor among simple beings. In fact, in every instance of investigation into the nature of simple organisms, or such as appear simple by the optical instruments at our disposal (a fact that does not always prove their simplicity), as bacteria, for example, we find that chemical irritability is the apparently sole law of movement. What else, indeed, are the movements of these bacteria so thoroughly studied by M. Englemann, if not an affinity for oxygen, — in other words, the simplest and most universal chemical phenomenon in all nature?"[1] To this M. Alfred Binet replies: "We believe that, as yet, no one has demonstrated that the movements of a living being, in moving towards a distant object, however simple they may be, can be explained merely by a chemical affinity acting between that being and that object. It is certainly not chemical affinity that is acting, but much rather a psychological need."

[1] Translated from the *Revue Philosophique* for the *Open Court*, December 27, 1888.

It is clear, I think, that one great point of difference between these two eminent physiologists lies in their different attitudes to the law of continuity. M. Richet holds that simple beings have a simple psychology. He does not mean to affirm that this simple psychology, because it may be expressed in the terms of chemistry, is therefore not psychical. On the contrary, he elsewhere calls it "elementary psychic life." But M. Binet, seeing in chemical affinity something very unlike psychical or physiological need, assumes that there is no community of nature between the two. And in so doing he seems to me to be drawing one of those arbitrary lines, which have been so frequently laid down only to be obliterated by the onward movement of scientific investigation.

The origin of such lines, if I am not mistaken, is to be found in the idea that, at some point on the scale of existences, all complexity of nature ceases; and that there are such things in the world as absolutely simple elements, — an idea which we have found to be the contradiction of experience. The same way of thinking has operated to restrict the recognition of consciousness below a certain line; so that we find the greatest diversity in biological writers as regards the freedom with which they impute this characteristic to the lower orders, and often the greatest pains taken to define the limits within which it may be believed to exist. It is assumed that, until we reach a certain degree of complexity of constitution, there is nothing in the world but mechanical action; and that consciousness supervenes as an absolutely new product.

The simple fact is that consciousness cannot be *proved* to exist at any point. Its recognition is always a matter of analogical inference. And I believe no good reason can be alleged for refusing to extend our analogy to existences that display so great a variety of operation, in response to irritation, as the elementary atoms of chemistry. If consciousness in man is the concomitant of complex chemical changes, is it not reasonable to infer a simpler form of consciousness as the attendant of chemical changes that are relatively simple?

We cannot dwell longer on this point, for we have to consider another of the characteristics of what we call inanimate matter. The immobility of many of the materials that surround us seems to render the idea that they have any psychical element too improbable. We hold in the hand a coin that a thousand years ago was just what it is now, and say, is it thinkable that the atoms of which this coin is composed are beings with the possibility of anything like mental responses or consciousness? Ages upon ages before this coin was formed, the molecules of copper of which it is composed laid immovable in the earth. Certainly it does seem almost too heavy a thought for the imagination to lift; and we eagerly search through the psychic life with which we are familiar for all possible analogies that may illustrate these long intervals of inactivity and unconsciousness.

Even in the most complex beings we have the phenomenon of deep, dreamless sleep. We have also the phenomena of coma and catalepsy to re-

mind us that the most highly developed minds may continue long in a state bordering upon absolute inactivity. And when we descend the biological scale, we find, in the hibernating animals, much more remarkable instances of suspended animation. Creatures that are so frozen as to appear to be simple fragments of ice will reassume, on the application of heat, all their functions. The simpler the combinations into which elementary beings enter, the more lasting should we expect these combinations to be, and the longer, therefore, the possible intervals between their active states; for we know that consciousness, and psychic activity of every kind, is the concomitant of chemical change.

But we are apt to deceive ourselves when we picture to the imagination the deadness of matter. We forget that civilization is engaged in a hand-to-hand and never-ending conflict with the eternal restlessness of this same dead matter. Unless carefully guarded, very few of the things that we use last long, not simply because they wear out or meet with violent ends, but more especially because the elements of which they are composed are forever changing their alliances. We forget, moreover, how incessant and powerful are the changes that are continually taking place on a vast scale around us; how oxidization and the vicissitudes of cold and heat are keeping the world of apparently inanimate matter in a state that, could we see it as it is, would present a scene of the liveliest animation.

And, finally, we have to remind ourselves that all these analogies are perhaps useful only as illustrat-

ing a condition of relative immobility; that there is, probably, no such thing as absolute rest. The molecules of solids are not thought of by science as isolated particles, but are believed to be constantly moving bodies that determine each other's orbits by their mutual attractions. And, further, all solids are convertible into gases, — a form in which their molecules, according to the kinetic theory of gases, resemble "a swarm of innumerable solid particles incessantly moving about with different velocities in rectilinear paths of all conceivable directions."

To get on with our argument, then, let us assume that a hylozoic view of the world is admissible, and proceed to determine its bearings upon the mechanical theory. Does it materially alter the situation as regards that theory? It certainly does. For these two categories, mechanism and mind, if they are coextensive in the universe, cannot dwell together on an equal footing. It is true that the physical realists would have us believe that they can; and Mr. Spencer thinks that he has so presented them to us in his philosophy. It seems to him that he has given both these aspects of reality an impartial treatment and an equal standing when he presents us with the conclusion that there is *one* inscrutable reality, and that this manifests itself to us with *two* faces, that cannot by any effort of the imagination be reconciled with each other. But, as matter of fact, these two aspects do not stand on the same level in the dynamics of his philosophy. All the movement in his system is obtained by treating the objective, mechanical side as the representative

of the causative element, and the subjective side as the effect.

His evolution proceeds upon the assumption that force is antecedent to mind, — that force without mind has elaborated a large part of the world as we see it, and then has given birth to mind. It is true that he seems sometimes to state the opposite belief, as when he says: "On tracing up from its low and vague beginnings the intelligence which becomes so marvelous in the highest beings, we find that, under whatever aspect contemplated, it presents a progressive transformation of like nature with the progressive transformation we trace in the universe as a whole." But when he illustrates this thought he goes no further back than the simplest forms of the nervous system; and all through the earlier part of the evolution the physical *aspect* is treated as a physical *reality* that, working by itself, performs wonders, without any assistance from the mental aspect. Mr. Herbert's remark on the use that Mr. Spencer makes of his two *aspects* seems to me a most just one. He says: "It seems fair to describe the objective face [as used in the "Synthetic Philosophy"] as *essential*, and the subjective as *non-essential*." [1]

Take away, now, from the realistic philosophy this unwarrantable assumption of the efficient nature of the mechanical side of things; recognize clearly, in accordance with the law of continuity, that it had no precedence of the mental side in the order of

[1] *Modern Realism Examined*, by Thomas Martin Herbert, M. A., p. 85.

time, and the whole view of things elaborated by this philosophy vanishes. If the mental and the mechanical side coexisted from the beginning, we are obliged to assume a subordination of principles of an exactly opposite kind from that implied in physical realism. The two categories cannot stand on an equal footing. The category of mind, as we have elsewhere argued, is the category of causation. It is from our subjective consciousness of the originating power of mind, and from this alone, that we have derived the idea of cause.

If, then, there has been, from the beginning, a psychical element, this must be regarded as the cause; and the mechanical aspect of the world, as the form which that cause assumes when viewed from the outside. There is here no hiatus between mind and mechanism like that which appears in the schemes of physical realism. We do not have to say that there are two faces of reality, having a "difference that transcends all other differences," two manifestations of an inscrutable reality that "no effort enables us to assimilate." On the contrary, we have *the* reality, the *efficient element of the world*, manifesting itself in a character that is perfectly homogeneous with mind as made known in our experience, but having the quality of calculable action in an extreme degree.

Nor is this all that we gain for scientific coherency by doing justice to the principle of continuity. Having cleared our consciences with regard to this law, the prospect brightens, like the path of the just, at every onward step. A difficulty equally

fundamental with the one we have been discussing troubles the physical realists in view of the law of evolution. For if we postulate inanimate atoms and forces as the original essential realities of the world, it is not only impossible to evolve mind from them, it is impossible to evolve anything. And this is a fact, although Mr. Spencer's philosophy appeals to us as a system founded upon evolution. Let us see how the mechanical and the evolutional conceptions of the world stand related to each other historically and logically.

Evolution found the scientific world possessed by the mechanical idea. This in its purity took no note of origins, or of a *process of becoming* in the world. It viewed the world as an independent mechanism, complete in itself, — a mechanism that had been struck out all at once, each part dependent, from the beginning, upon every other part. In opposition to this view, evolution concentrated attention upon the thought of the world as a mechanism that in the beginning was no mechanism, but an aggregate of homogeneous atoms and varying forces. The mechanism had been slowly elaborated by successive modifications that had at length resulted in great complexity. This view was not altogether new. It had held a place, in speculative philosophy, alongside of the mechanical concept, without coming to any definite terms with it. But the prominence and positiveness into which it was brought by the hypothesis of evolution made some sort of an adjustment between it and its rival imperative.

The mechanical theory, whether fitted to express the new phase of reality or not, must assert its inclusion of it, or forfeit its claim to all-comprehensiveness. Mr. Spencer's philosophy is this assertion. He employs, from the beginning, a method that handicaps all honest investigation of phenomena, by prescribing in advance what their testimony shall be. If it chances not to be thus and so, it must be ruled out as false. The principle is thus stated in the "Synthetic Philosophy:" "The task before us, then, is that of exhibiting the phenomena of evolution in synthetic order. . . . And it has to be shown that this universality of process results from the same necessity which determines each simplest movement around us, down to the accelerated fall of a stone or the recurrent beat of a harp-string. In other words, the phenomena of evolution *have to be* deduced from the persistence of force. To this an ultimate analysis brings us down, and on this a rational synthesis *must* build up." [1]

I have ventured to italicize the words *have to be* and *must* in this quotation, because Mr. Spencer's scheme of evolution hangs by its whole weight upon them. If it is true that the doctrine of the "persistence of force" is an exhaustive expression of the known reality of the world, then we may proceed as he has done. The phenomena of evolution can have nothing to say for themselves. They *must* fit into the grooves prescribed for them. They are like a consignment of emigrants whose indentures of bondage have been signed and sealed in advance. Any

[1] *First Principles*, sec. 147.

apparent protests they may offer are not to be attended to. In fact, they must not be regarded as protests at all, but as expressions of perfect satisfaction in a language which we do not altogether understand.

But if, on the other hand, as we have argued in our earlier chapters, it is *contrary* to reason and experience to assume that the doctrine of energy is exhaustive of known reality, then the phenomena of evolution are entitled to a new trial, in which their testimony shall be received without a prejudgment of what it *must* or of what it *must not* be.

But, it may be urged, Mr. Spencer does not mean to affirm that the phenomena of evolution must be *forced* into the terms of his ultimate principle; on the contrary, he claims that they can be *deduced from* it, and that his philosophy is a satisfactory explanation of the genesis of all known reality. True, this *is* his claim. But we have already shown that one half of reality refuses to be so derived, and now it remains for us to show, more particularly, that the other half is equally recalcitrant; in short, that *none* of the phenomena of evolution can be deduced from the doctrine of the persistence of force; that they must all either be perverted and made to appear what they are not, or be stated in terms other than those of mechanism.

There is only one way by which the world-process can be made to appear purely mechanical; that is, by postulating an aggregate of homogeneous atoms as its antecedent. Unless we have this common standard of unity, the problem is not a purely mechanical

one. But having it, and nothing else, how are we going to get diversity out of it? With force acting upon homogeneous atoms, we can get no differences other than those of number and position. No matter how unequally the force may be applied, or how variously the atoms may be combined, the results must always remain homogeneous. No differentiation of qualities can be reached through the merely formal variation produced by force, conceived of as acting from without upon homogeneous units. In order to get started on that career of qualitative variation which constitutes evolution, we must assume a difference of original nature to the units. Whether these be regarded as material atoms, or as mere centres of force, they must be intrinsically different.

But having conceded this original, inner nature to the units of combination, the mechanical theory is at once so radically modified as to deprive it of all its power to exclude agencies other than mechanical. This theory may, as we have already said, legitimately ignore, for its own purposes, the existence of this inner nature of things. All it requires for its operation is that each unit shall retain the same nature when not in combination. But we have always to remember that this exclusion of the inner nature of things from the field of reality is only provisional, not absolute. As Lotze has expressed it: "After experience has taught us that the internal states of atoms — if such they have — exert no modifying influence on the regularity of their working, we can leave them out of account as regards phenomena, without having at the same

time to banish them from our view of the universe. On the contrary, further considerations would soon bring us back to the idea that forces do not attach themselves to a lifeless inner nature of things, but must arise out of them; and that nothing can take place between the individual elements until something has taken place within them." [1]

Grant this conception of an inner nature, with manifold possibilities of response, and evolution moves on apace. In the contact of atoms so endowed, we may have innumerable combinations; and every change may be productive of beings or substances with new characteristics. But already in this conception the mechanical thought is lost sight of. We have unwittingly adopted in place of it an exceedingly attenuated anthropomorphism. The very words *response*, *reaction*, — and we can find no others to express the idea, — betray the origin of our hypothesis. On every side we postulate internal movements called out by contact with other natures. There is here no stagnation, no rigidity of constitution. Each element at the moment of its internal change is conceived of as *acting*. It is, during that moment, radically different from what it was before, and from what it will be afterward.

We cannot yet proceed to make an application of this view to the problems of philosophy or theology; for there are other important considerations that must first be laid before the reader. Up to this point we have reached the following conclusions: We have seen that we must accept mind as a distinctive

[1] *Microcosmus*, vol. i. p. 49.

reality of the world. We have seen, further, that, if mind is *real*, it cannot be an excrescence, an external product of one part of the world-process; but that it must be the inmost essential reality of things, the very spring of the process itself. And, lastly, we have seen that there is the same reason for postulating the continuity and universality of mind that there is for assuming the continuity of force.

CHAPTER VIII.

UNITY IN MULTIPLICITY.

THERE are real things in the world that are more difficult to conceive of than atomic souls. In its absolute unity, in its spontaneity, and in its diversity of operation, the hypothetical atom corresponds very closely to that which the soul believes itself to be. The *ego*, in the light of self-consciousness, is one and indivisible. The diversity of its activities never suggests a real diversity of being. It always stands in the imagination as a thing quite apart from the organs of the body, which seem to be the instruments of its will. The atom, therefore, indivisible, spontaneous, and varied in its activities, is no inapt symbol of the soul as known to itself. Indeed, so far as the combination of these particular qualities is concerned, it would be impossible to find another as good.

But that aspect of reality which the soul exhibits to itself is not the only one that must be taken into the account. Unit as it is, its unity is somehow coincident with an amazing complexity, — a complexity that admits of analysis. And though we have resolved to regard the elementary atoms of the world as beings, the problem of the unity of the soul is as far from solution as ever. In fact, the concept we

have applied to the interpretation of atoms seems to render them quite unavailable for the construction of an organically connected world. The very essence of soul life, from this point of view, is isolation and independence.

So profoundly was the mind of the great Leibnitz impressed with these characteristics of being, when he constructed his theory of the world as an aggregate of atomic souls, that he represented these souls as leading absolutely separate lives. There is, he supposes, no real action of one upon another. Each carries within itself the reason of its own changes. Everything that takes place in a monad is the development of its individual, unstimulated activity. To account, then, for the diversities of being, he made his atomic souls, or monads, of various orders, ranging from the Supreme Being, the source of all other monads, to souls having no self-consciousness. And to account for the appearance of interaction between these beings, he invented the hypothesis of a *pre-established* harmony, arranged in the beginning by the Creator. The internal development of each monad was said to be so adjusted to that of all other monads as to produce the *false* impression that they are mutually influenced by each other. In short, he tried to harmonize the facts of the world by reducing one great class of them to illusion, — a method with which we are familiar, but which our philosophy sedulously avoids.

All that we know about the nature of the soul is derived, in the first instance, from our knowledge of the human soul. And this, as we shall hope to con-

vince the reader, is known to us not simply as a unit, but as a unit that rests upon and embraces within itself an untold multitude of beings. If, therefore, we would use the *ego* for the interpretation of the universe, we must always carry with us these two conjoined, though not harmonized, aspects of its reality. Thus far, we have found in the atom a symbol of the soul's unity. Now let us ask, do we in the combination of atoms find a symbol of its unity in multiplicity? I think we do. Our elementary atom does not maintain an isolated, independent existence. It combines with others, not simply in the union of an external association, but in the real union, which gives rise to another individual.

For instance, we have two highly inflammable gases, hydrogen and oxygen. Two atoms of the former combine with one of the latter to make a molecule of water. The hydrogen seems to have surrendered its individuality, and the oxygen has likewise lost its identity. But in their place we have an absolutely new unit, with a nature that bears no resemblance whatever to either of its constituents. What has become of the atoms? Have they been destroyed? It appears not; for they can be brought back again, absolutely unchanged by the transformations through which they have passed; they have lost nothing, they have gained nothing, they have remembered nothing. And what shall we think of the new unit, the molecule of water? Is it an arch-being, containing within itself three subordinate beings? Who can say? There are more things in heaven and earth than can be pictured to our ima-

ginations. We might, indeed, guess that in stable combinations, like this, the consciousness of the atoms is suspended, and that until some further chemical change arouses them to activity, they rest as in a deep sleep.

But of the molecule of water we must postulate a real individuality. In many diverse relations it acts as a unit. In steam it separates itself from other molecules and takes on the appearance of an isolated, independent being, pursuing its individual ends with great energy. In water it appears, still in motion, but with movements coördinated to that of other molecules, with which it forms a homogeneous, mutually attracting aggregate. And again in the form of a solid it enters into that class of relations to which Lotze refers when he finds himself "constrained to conceive extended matter as a system of unextended beings that, by their forces, fix one another's position in space, and by the resistance which they offer — as if to the intrusion of a stranger — to any attempt to make them change their place, produce the phenomena of impenetrability, and the continuous occupation of space." [1] When entering into this latter state, moreover, molecules display, in crystallization, phenomena that suggest instinct. Obedient to some magnetic or other influence, they arrange themselves in those definite structural forms of great beauty with which snowflakes and frost have made us familiar.

Some compound molecules, again, act as units in the formation of other substances of greater com-

[1] *Microcosmus*, i. 358.

plexity. As compound radicals, they associate themselves with elementary atoms and produce molecules that are composed in some cases of more than one hundred atoms. Carbon atoms unite thus with each other to form groups of great stability that act as radicals. These, Professor Cooke tells us, "may be regarded as the skeletons of the organic compounds. Locked together, like so many vertebræ, these carbon atoms form the framework to which the other elementary atoms are fastened, and it is thus that the complex molecular structures, of which organized beings consist, are rendered possible." [1]

Now there is certainly nothing in all this to *compel* the belief that molecules are beings. Not every closely related assemblage of units constitutes a new unit; and it is impossible for us to determine, in every case, whether what we are contemplating is a real union or merely an association. It might be urged that if molecules are beings, then crystals, which are an assemblage of molecules having definite structural relations to a common centre, or axis, should be regarded as beings also. But, on the other hand, it might be shown that the phenomena of crystallization imply no real union of a multitude in a higher unity, but a symmetrically connected aggregation, that finds its analogue in a colony of closely related beings.

But we cannot *demonstrate* the non-existence of individuality in a crystal, nor its existence in a molecule; it is all a question of the fitness of analogies. It was in obedience to the law of continuity that we

[1] *The New Chemistry*, p. 312.

ventured to postulate the existence of atomic souls; and it is in obedience to the same law that we see in molecules an illustration of that unity in multiplicity that characterizes being in its highest manifestations. But we are at present laboring under a disadvantage with the reader. Our reasons will become more apparent as we ascend the biological scale; and this we will now proceed to do.

Organic molecules combine to form living organisms. The least complex of these appear to us as single nucleated cells. They are sometimes called simple or homogeneous. But that these are only relative terms is demonstrated by the great complexity of their behavior. So much has been recently written upon the marvels of adaptation displayed by these microscopic beings that we need not dwell long upon the subject. M. Alfred Binet, who has made a most elaborate study of them, leaves the existence of consciousness an open question, but he contributes the following facts that bear upon it. He finds in these beings —

1. "Perception of the external object."
2. "Choice made between a number of objects."
3. "Perception of their position in space."
4. "Movements, calculated either to approach the body and seize it, or to flee from it."

This is an exceedingly modest set of deductions from the facts set before us by their author. For instance: "The *didinium* knows precisely the position of the prey it follows, for it takes aim at the object of its pursuit like a marksman, and transpierces it with its nettle-like darts." Another spe-

cies exhibits all the appearance of a voluntary and intelligent combination on the part of individuals for the attainment of a common end. "The *bodo caudatus* is a voracious flagellate possessed of extraordinary audacity; it combines in troops to attack animalculæ one hundred times as large as itself, as the *colpods* for instance, which are veritable giants when placed alongside of the *bodo*. Like a horse attacked by a pack of wolves, the *colpod* is soon rendered powerless. Twenty, thirty, forty *bodos* throw themselves upon him, eviscerate and devour him completely." [1]

Rising, now, another step on the scale, we come to communities formed of a number of connected cells, in which each individual is like every other. Here we have a suggestion of unity in multiplicity; but it appears, in fact, to be only a closely connected association of beings. The following account of such an association is given by the writer above mentioned: "In the genus *volvox*, colonies are found of which the structure is very complicated. Such are the great green balls formed by the aggregation of diminutive organisms, which form the surface of the sphere, and are joined together by their envelopes; they have each two flagella, which pass through the inclosing membrane and swing unimpeded on the outside; the envelopes, each tightly holding the other, form hexagonal figures exactly like the cells of a honeycomb. Each *volvox* is at liberty within its own envelope; but it projects protoplasmic extensions which pass through its cuticle and place it

[1] *The Psychic Life of Micro-Organisms*, p. 60.

in communication with its neighbor. It is probable that these protoplasmic filaments act like so many telegraphic threads to establish a network of communication among all the individuals of the same colony. It is necessary, in fact, that these diminutive organisms be in communication with each other in order that their flagella may move in unison, and that the entire colony may act as a *unit* and in obedience to a single impulse." [1]

Passing on from communities in which all the cells are alike, we come next to those in which there is some degree of differentiation and division of labor. In the *diœcian volvox*, the female cellules are all joined together in one colony, and the male in another. In the male colony every individual is alike, but in the female there are neutral cellules which are not designed for fecundation, but which simply perform a locomotive function. "Equipped with one eye and two flagella, they are intended to move the great colonial ball; they are the oarsmen of the colony."

Our next step is a long one. The colony of the *volvox*, as we have seen, exists as a sphere. It never gets beyond this form. But the *hydra* exists as an open sac, the inside of which is composed of cells that not only differ from those of the outside, but also perform very different functions in the economy of the organism. When we have reached this stage we are, without any question, contemplating a permanent organism, composed of a multitude of lesser organisms, — a single being that exists by

[1] *The Psychic Life of Micro-Organisms*, p. 57.

the combined action of other beings, varying from each other in form and function. We may therefore turn from the consideration of the taxonomic series to that of the ontogenetic; and study the increasing complexity of being as it appears in those stages that succeed each other in the life history of each individual of a higher species.

Every animal, man included, is at the outset a single nucleated cell. The first step in the upward development of this individual is its division into two, by a process called segmentation. This process continues till we have a multitude of cells, every one of which is like the other. The form which these cells take in animals belonging to all the chief groups is called a *planula*. It is a form that calls to mind the spherical colony of *volvox* just considered. It is described by Professor Huxley as a *central space* around which the aggregate of cells is disposed as a coat or envelope, the inside being filled with fluid.

The next stage is the transformation of this fluid-filled vesicle into an open-mouthed sac. This is done not by opening the planula, but by a process called invagination. Its wall, the blastoderm, is gradually pushed in on one side. Mr. Spencer has made this process very easy to understand by the following illustration: "Take a small india-rubber ball, not of the inflated kind, nor of the solid kind, but of the kind about an inch or so in diameter with a small hole, through which, under pressure, the air escapes. Suppose that, instead of consisting of india-rubber, its wall consists of small cells, made

polyhedral in form by mutual pressure, and united together. This will represent the blastoderm. Now, with the finger, thrust in one side of the ball until it touches the other, so making a cup. This action will stand for the process of invagination. Imagine that by continuance of it, the hemispherical cup becomes very much deepened, and the opening narrowed, until the cup becomes a sac, of which the introverted wall is everywhere in contact with the outer wall." [1]

This two-layered sac is called a *gastrula.* It is permanently represented among living forms by the *hydra*, which we have just considered, with the addition of tentacles around the opening of the sac, which serves the animal for a mouth. But now, in the embryos of higher animals, a layer of cells makes its appearance between the outer and the inner walls. While the process of introversion is taking place, and before the two surfaces have come in contact, cells are budded off from one or the other, or both, to form this third class of cells, that are quite different in their characteristics from either of the others. At this stage, then, we have an organism consisting of three classes of cells or beings. But this is only the foundation for a new series of transformations; for each of these classes, by the same process of multiplication and differentiation, gives rise to a number of other classes. From the outer layer, the *epiblast*, is developed the epidermis and the whole nervous system. From the inside layer, the *hypoblast*, springs the nutritive

[1] *The Factors of Organic Evolution*, by Herbert Spencer, p. 64.

system, and the lining of the air-tubes of the lungs; and from the middle layer, the *mesoblast*, are derived the blood-vessels, muscles, bones, etc. Thus, by repeated transformations, the most heterogeneous results are reached.

This is one aspect of the process; but now we must take note of another, that is no less wonderful. Out of this ever-increasing diversity there emerges, how we can never imagine, an ever-increasing unity. In the case of a human being, it is represented by the intelligent, self-conscious, self-asserting *ego*. This unmistakably real person comes more and more prominently into view, while the individuality of the constituent beings sinks out of sight. As soon as we turn to this more familiar view, it seems as if the one to which we have been giving our attention must be an illusion, founded upon some mistaken analogy. But can it be so? Our first cell is a real being, to which we have every reason to impute a degree of sensibility and consciousness. Our second and third and following cells, made from the first, seem to be duplicates of it. If the individual cell-life ceases, at what point does it cease?

Shall we make the hypothesis that the individual life of cells comes to an end when the main work of organization is completed? that, as soon as they become *non*-progressive, they, as it were, surrender to the *ego* their psychic life, and are henceforth its mechanical instruments? We might, indeed, conjecture that this ought to be the course of events, but there is no evidence to show that it is. On the

contrary, there is much to show that the individual cell-life, in its *semi*-independence, continues in full force.

The most striking illustrations of this are to be found in those classes of cells that most readily suggest detached organisms, by the freedom of their movements, and by the means used for the capturing of food. Speaking of the walls of the intestines, M. Alfred Binet says: "They are covered with epithelial cells, each of which is an organism endowed with a complex of properties. The protoplasm of these cells lays hold of food by an act of prehension, exactly as the ciliate infusoria and other unicellular organisms do, that lead an independent life. In the intestines of cold-blooded animals the cells emit prolongations which seize the minute drops of fatty matter, and carrying into the protoplasm of the cell, convey them thence into the chylifactive ducts." Another mode of absorption of fatty matters, met with among cold-blooded as well as warm-blooded animals, is described as follows: "The lymphatic cells pass out from the adenoid tissue which contains them, so that upon arriving at the surface of the intestines they seize the particles of fatty matter there present, and, laden with their prey, make their way back to the lymphatics."

Of another class of cells, the white globules of the blood, we know that they lead a life almost as independent as that of the wholly separate amœba. Bent on errands of their own, they swim through the veins and arteries, gaining their own livelihood, and contributing in some way to the well-being of

the community. It is surmised that they constitute a sort of patrol corps, the members of which, passing up and down the system, arrest and digest suspicious foreigners that may have found their way into its life currents. Spirited encounters between them and the flagella-armed microbes of malaria have been described by eyewitnesses. Of still another class of cells we know that the individuals detach themselves from the organism for the continuance of the race by the production of other organisms, and we know, further, that each one of these goes freighted with a potentiality of constructive power that, from the start, bankrupts the imagination that would seek to follow it.

But now, let us observe, freedom of locomotion is not the only or most impressive evidence of individual psychic efficiency. The greater part of the thinking and planning and directing among human beings is done by sedentary individuals to whom locomotion is an unimportant incident.

Millions of nerve cells lead a sedentary but most active life within the organism. Each occupies its own settled position, but all are so linked together by nerve fibres that each one is in communication with the whole cell-system. At first sight this system would seem to be more correctly described as composed of homogeneous matter, differently distributed ; some in masses, and some drawn out into delicate fibres, that convey energy between the masses as electricity is conducted on wires. But a more careful investigation reveals the fact that both the masses and the fibres are composed of individuals.

The fibres are a connected series of elongated cells, and the masses are an agglomeration of cells, differing both in form and function from those of the fibres. This division into two great classes is, however, only the beginning of the differences that exist, — differences that are made known to us not simply by the outward appearance of the cells. For though these vary much, both in size and form, the material of which they are composed appears, to chemical tests as well as to the eye, to be the same everywhere. It is only by their behavior that we know them to have characteristics that separate them widely from each other, both as species and individuals within the species.

The case is the same as with germs. All animals start from germs, that so closely resemble each other that it is impossible to say what kind of an animal each one is destined to produce. But notwithstanding this similarity, we know that one has in it the possibilities of a most elaborate organism, consisting of millions of cells, each one differing from all the others; while another has in it only the most simple constructive powers. From this we infer a complexity of structure in germs just as certainly as if we could see it. It is not otherwise with the apparent simplicity and uniformity of nerve cells. One elaborate set is connected with the sense of sight, another with that of hearing, another with that of smelling. Now if we apply the very same stimulus to each one of these sets in turn, the result will be three very different sensations.

The following is, in substance, a quotation from

Dr. Ewald Hering's account of the matter. If in a perfectly dark room the nerves of the eye are irritated by an electric current, the sensation of light is produced; but if we pass an electric current through the auditory nerve in an absolutely silent room, we hear sounds. Or if, again, the current is applied to the nerves of the skin, the sensation of heat and cold is experienced, although we are not in contact with any cold or warm object; and if by the very same current we excite the nerves of the tongue, gustatory sensations are produced.

In view of these facts Hering, accepting Johannes Müller's theory of the specific energies of the sensory nerves, makes the following statement: "The diverse structures of the nervous system, the nerve cells and the nerve fibres, are internally different in spite of all external similarity; and the diversity of the sensations produced is a manifestation of such difference." [1] And in another place, speaking of the educating influence to which nerve cells are subjected by means of their manifold anatomical connections, he says: "Every single cerebral element, in the course of its development and under the influence of sensory experiences, attains an individual character. And it may be asserted that not even two of the innumerable cerebral cells are alike in kind and degree of individual energy."

But it may be said, mere difference of constitution does not carry with it the necessity of inferring consciousness. Why should we not limit ourselves

[1] An Address on *The Specific Energies of the Nervous System.* Translated for the *Open Court*, December 22, 1887.

to a chemical expression of the phenomena? When a nerve cell responds to a stimulus, it is simply the reduction of an exceedingly unstable compound to simpler elements. And if the responses are different, why should we not ascribe all such differences to variations of chemical composition? Our reply is that, however correct an account of the matter this may be from one point of view, it is not exhaustive. All consciousness in the human *ego* is also conditioned upon chemical changes. But in self-consciousness we have revealed to us another side of the process; and the more intimately we become acquainted with cell-life, the more necessary does it seem to reason analogically from the human *ego* to the hypothetical cell *ego*.

We know that a cell consists of a protoplasmic body and a nucleus; and that this nucleus somehow exerts a controlling and modifying influence over the cell as an organism. This suggestion of a relation of parts or organs, similar to that existing between the human brain and the rest of the organism, might not in itself be considered important. But there is that in the behavior of the nerve cell that strongly suggests the most distinctive characteristic of mind; that is, self-control. A normal cell when stimulated does not react to exhaustion, but responds by measure. Just as a person *chooses* to be more or less indifferent to one set of influences while responding freely to another, so also it seems to be with nerve cells. This power of *inhibition*, as it is called, differs in cells and groups of cells as much as persons differ in temperament, and there is

every indication that it is a phenomenon of exactly the same nature as that which convinces us that we are, to a certain extent, responsible beings.

We cannot dwell longer on this aspect of the subject, and we will therefore close it with the following statement of results given by Dr. Ewald Hering, in the address already referred to: "Millions of the minutest separately existing beings, different in shape and external structure, compose a systematically arranged aggregate, thus forming the diverse organs; and these beings, in spite of the complicated interdependence, lead quite separate lives, for each single being is an animated centre of activity. The human body does not receive the impulse of life like a machine from one point, but each single atom of the different organs bears its vitalizing power in itself."

We must now return to the *ego*, upon which we have been, for some time, turning our backs. What has this multitude of beings to do with it? or it with them? As we very well know, it has no conscious relations with them, though it lives and thinks by means of them. Yet the *ego* has conscious relations with the body. Its organs are its servants, which it intelligently directs for its uses. In other words, while it does not deal singly with the individuals of its great empire, it does deal with them as organized groups. According to their special functions, the individuals are organized in such manner that each group presents something the same aspect of unity in diversity that characterizes the larger organism. As we have already seen, the in-

dividuals that have to do with the sense of hearing are organized in a system by themselves. Those that serve the sense of sight form another system; and those that serve the sense of touch still another. And, somehow, there is a unity of action in each system, — a coördination, by means of which the activities of a diversified multitude are combined for the achievement of very definite ends.

The same appearance of separate yet organized and harmonious action characterizes those bodily functions that are less closely related to our consciousness. The beating of the heart, the movements of the lungs, and other complicated activities we call *automatic*. That is, they seem to take care of their own affairs, without assistance from the central consciousness. The situation is thus described by Mr. G. H. Lewes: "The actions of the organism are many, various, but interconnected. Some are unapparent (to consciousness), others are apparent. Some are the components of combined results not separately recognized; others are groups which seem independent of each other. All the actions which go to form the group respiration are vital actions, though we only consider their result. Respiration is, or it seems to be, an action independent of digestion; and locomotion, a group independent of both. It is thus, also, with mental actions. They have a relative independence and an absolute interdependence." [1]

It might naturally be expected that the actuality of these seemings, if they have a ground of reality, ought to be traced by anatomy not only to the dif-

[1] *Mind as a Function of the Organism*, sec. 165.

ferent sets of muscles that serve the purposes of each group, but further to the separate combinations of nerve cells, fibres, and ganglia that are the specific brain of each. This, however, can be done only to a very limited extent. The nervous system of man, even to our modern anatomy, remains little better than a maze of unexplained intricacies.

For an illustration of the greatest independence of nerve centres we have to go to the lower animals. For instance, when certain insects are cut in two, the anterior section will continue to exercise its appropriate function of devouring, as if nothing had happened. And others, when treated in the same way, will show as great and as discerning an activity in the posterior half. Praying crickets will pursue successfully the quests dictated by their generative instincts for days after their heads have been removed; and the two halves of a divided earwig will turn against one another and contend furiously with their antennæ so long as strength remains. Anatomy shows that this extreme degree of independence is owing to the existence of separate, slightly connected centres of nervous energy. And in the brains of the higher animals we have what appears to be an aggregation of more or less separate ganglia connected by nerve fibres. The spinal cord seems to be a series of ganglia which have coalesced. That a central organ may be thus composed from a number of more independent ganglia is shown in the metamorphosis of insects. Ganglia that appear in the larva state as separate are found to be consolidated at a more advanced stage of development.

In the human organism, each one of these centres seems like a separate bureau that is superintended by its own head, and served by its own particular staff of officers. The central consciousness may considerably modify and interfere with these separate departments, but it can never assume their functions. It sustains them, defends them; to a certain extent it regulates times and seasons. It can quicken or retard their motions. Some of them it can direct, modify, and educate. But if they stop working, it cannot supply their places by its own skill. It is as if, all along the process of organization, heads of departments were evolved concomitantly with the departments themselves, specialized souls to superintend and regulate special organs and functions. The greatest degree of independence exists in those on which vitality depends, and which we share in common with lower organisms. The external appearance and movements of some of these very strongly suggest creatures with whose independent existence we are familiar. The movements of the intestines have the most remarkable resemblance to the creeping of a worm, the great difference being that the worm propels *itself* forward on its support, while the intestines, being fastened, push along the masses of food and the fæces.

Contrasted, in point of independence, with the foregoing class, are the faculties that have sprung up in connection with the conscious purposive efforts of the central intelligence. Certain departments of the nervous organization, while they come to us

ready-formed for action, are yet to a great extent dependent for their usefulness upon the education and guidance they receive from the conscious *ego*. One after another the senses offer their services to the undeveloped soul that has been awakened to conscious life through their intervention. At first the soul has to learn the language which they speak. It is like an infant surrounded by nurses and instructors able to impart far more than the pupil is capable of appropriating. But, anon, the soul grows, and the former instructors become its willing and faithful servants. Having assumed control, it directs the energies of these skilled dependents in channels that are more or less new and strange to them.

The soul wills that it shall know how to read. Eyes and fingers are there to help it to accomplish this end. But they can do nothing of themselves. The *ego* must begin the work by intelligently fixing its attention upon the task, while it assumes the rôle of instructor. This it does, slowly at first, advancing by successive steps. But there comes a time when all this painstaking concentration on the part of the central intelligence is dropped because it is unnecessary. A subordinate centre of psychic activity has assumed the whole business, and does it with an ease and quickness that is beyond the attainment of a being less specialized.

It is the same with all our acquired faculties. At a certain stage of conscious endeavor, a beneficent spirit seems to come to our assistance. We are not only relieved of a portion of the labor that formerly

rested upon us alone, but the new-comer has a facility that far transcends anything of which the *ego* gave promise. All the information that flows from different sources into this specialized centre is coordinated with a rapidity that is simply marvelous to the reflecting *ego*. New situations in the environment are seen to have been successfully responded to, before the knowledge of their existence even had reached headquarters.

No less impressive is this diversity of operation when an overgrown, over-indulged subordinate centre has risen to supreme control in the organism, having debauched, on its way to power, all the other centres. We say that a man has lost all control of himself, that he is ruled by a demon; and perhaps we express more nearly than we think, the literal truth. The *ego* is still the more or less intelligent being that knows, and at times feels, the abjectness of its enslaved position, — that even attempts to recover its lost sway; but finds, perhaps too late, that all its servants have become insubordinate and treacherous.

But are we not letting imagination run away with us? Do anatomists find any objective evidence of the existence of such a plurality of semi-independent beings within the organisms?

Vivisection has certainly brought to light some very remarkable facts bearing upon the question, — facts that seem to shut us up to the acceptance either of some form of the above belief, or of an alternative that, to the great majority of minds, presents far greater difficulties. We begin with

the assumption that the *brain* is the seat of the central *ego*, — of the consciousness that each one of us calls *my consciousness*. Now if, in experimenting with a lower animal, whose brain we also regard as the seat of its *ego*, we find that the phenomena of purposive action continue after all connection with the brain has been severed, we infer either that *the brain is not the sole seat of consciousness*, or that consciousness is only an incidental accompaniment of that which we call purposive action. Professor Huxley boldly adopts the latter alternative. The following is his account of the behavior of a frog whose spinal column has been cut across so as to destroy all connection between the posterior parts and the brain : —

" Touch the skin of the side of the body with a little acetic acid, which gives rise to all the signs of great pain in an uninjured frog. In this case there can be no pain, because the application is made to a part of the skin supplied with nerves which come off from the cord below the point of section ; nevertheless, the frog lifts up the limb of the same side, and applies the foot to rub off the acetic acid ; and what is still more remarkable, if the limb be held so that the frog cannot use it, it will by and by move the limb of the other side, turn it across the body, and use it for the same rubbing process. *It is impossible that the frog, if it were in its entirety and could reason, should perform actions more purposive than these ;* and yet we have most complete assurance that, in this case, the frog is not acting from purpose, has no consciousness, and is a mere

insensible machine." [1] On the strength of this "complete assurance," Professor Huxley would carry us on to the *reductio ad absurdum* that we are laboring under an illusion when we attribute any of our purposive actions to consciousness.

But what kind of a certainty is this on which such an astonishing conclusion is based? All that can be certainly affirmed is that the central *brain consciousness* of the frog has no part in the production of these phenomena. But is it not possible that the consciousness of a subordinate nerve centre has? As we should expect, Professor Huxley has not altogether overlooked this possibility. He says: "If any one think fit to maintain that the spinal cord below the injury is conscious, but that it is cut off from any means of making its consciousness known to the other consciousness in the brain, there is no means of driving him from his position by logic. But assuredly there is no way of proving it, and in the matter of consciousness, if in anything, we may hold by the rule, *De non apparentibus et de non existentibus eadem est ratio.*"

Now, it seems to me that the whole matter is wrongly stated by Professor Huxley. He says, in the same connection, "It is wholly impossible absolutely to prove the presence or absence of consciousness in anything *but one's own brain.*" But the fact is, one's own brain is just the place where it is least possible to prove the presence or absence of consciousness. We, as persons, know, though we cannot by logic prove, that we are conscious. But

[1] *Science and Culture and Other Essays*, p. 227.

we have no *direct* knowledge that our consciousness is located in the brain. All the evidence that tends to the belief that it is so located has been gathered through experimenting on the brains of other animals more or less like ourselves. We assume the existence of consciousness in them, as Professor Huxley has said, through analogy with our own self-consciousness. But, on the other hand, we locate our individual consciousness in the brain rather than elsewhere, through analogy, from what we know of others. But the very same kind of evidence that points to the brain as the *principal* seat of consciousness, points to other nerve centres, situated in the spinal cord or elsewhere, as the seats of a more or less subordinate consciousness and intelligence.

I need not stop to analyze the behavior of the mutilated frog to prove this to the reader. I will only indorse what Professor Huxley affirms with regard to it. "It is impossible," he says, "that the frog, if it were in its entirety and could reason, should perform actions more purposive than these." There is just the same reason, therefore, for assuming consciousness in nerve centres outside the brain, as for assuming its existence *in* the brain. In short, the scientific conclusion to be derived from these phenomena of vivisection by themselves considered is plainly this: *The brain is not the only seat of consciousness.*

That this view, or one involving similar results, commends itself to eminent physiologists, is well known to those who are acquainted with the recent

writings of M. Alfred Binet. His experiments on hysterical patients have produced in his mind the conviction that, in them at least, "a plurality of person exists." Speaking of his own researches in connection with those of M. Pierre Janet, he says: "We have established, almost with certainty, in fact, that in such persons (hysterical patients) there exists, side by side with the principal personality, a secondary personality, which is unknown by the first, which sees, hears, reflects, reasons, and acts."[1] And referring to the explanation favored by the school to which Professor Huxley belongs, he says: "When I began my researches I did not hesitate to accept it, even contrary to the opinion of my friend M. Pierre Janet, who adopted the hypothesis of subconscious phenomena. But later, according as my observations and experiments became more numerous, I was compelled to abandon the explanation founded upon mechanical acts. This, I admit, cost me a great deal; for it is singular to observe how, despite ourselves and the desire of being impartial, we ever reluctantly surrender a first idea."

The researches here alluded to have been pursued chiefly through experiments on hysterical patients, who in certain parts of the body present a more or less extended region of insensibility. These regions sometimes embrace half the body, sometimes only a small spot, sometimes an entire limb. An arm, for instance, will become insensible from the extremity of the fingers to the shoulder joint. The latter case is a specially favorable one for experiments. The

[1] *The Open Court*, November 7, 1889.

arm, by being passed through a screen, is effectually cut off from the observation of the patient; and its absolute insensibility is established beyond a doubt by sudden painful excitations. This insensibility extends to all the tissues of the limb. Skin, muscles, tendons, and articular surfaces have lost all trace of sensibility.

Into the hand, thus cut off from connection with the central consciousness, a penholder is thrust between the thumb and the index finger. "As soon as the contact takes place the two fingers draw together, as if to seize the pen; the other fingers bend half way, the wrist leans sideways, and the hand assumes the attitude necessary to write." Next, the insensible hand is seized by the operator and made to write a familiar word, the patient's own name, for instance; but in the writing an error of spelling is intentionally made. The hand, now left to itself, at first preserves its attitude, but after a little interval begins to write, and repeats the word, sometimes five or ten times. "But, oddly enough, the hand betrays a momentary hesitation when it reaches the letter at which the error in orthography was committed. If a superfluous letter happens to have been added, sometimes the hand will hesitatingly rewrite the name along with the supplementary letter; again, it will retrace only a part of the letter in question; and again, finally, entirely suppress it."

This is only one of many experiments that have helped to establish in the mind of the operator the conviction of a plurality of conscious beings within the organism. The line of reasoning is in substance

as follows: The hand that performed the above actions was completely severed from the consciousness of the *ego*. The penholder was seized, the writing performed, and the mistake corrected altogether independently of the central consciousness, which at the time was occupied in receiving and attending to sensations from the other parts of the body. Everything seems to indicate that it is quite another person that has felt the penholder, recognized that it is a penholder, adjusted the fingers and hand for the use of it, written and rewritten a word suggested to it by familiar motions, and finally corrected the spelling of the word. The act seems to involve perception, reasoning, and intelligent adaptation.

But the evidence does not end here. For when these inferences are tentatively accepted and applied to other departments of experience, they receive corroborative testimony by affording a probable explanation of phenomena that are otherwise inexplicable. There are forms of insanity that have every appearance of being the usurpation of power by a personality within the system, — a personality that, in a normal state, would be held in subordination. I cannot illustrate this better than by quoting a few passages from a recent article in "The Lancet" on responsibility in mental disease, — an article that has no intentional bearing upon our hypothesis of subordinate personalities.

Speaking of cases in which violent acts are suddenly perpetrated in response to slight provocations, Sir James Crichton-Browne says: "In all such cases a momentary irritation, . . . instead of being

inhibited in its nascent state, . . . is, by the diminished resistance of the will, and the consequent overaction of the lower centres, permitted to become fixed, or to express itself in a grossly exaggerated manner." Another form he describes as a "sudden and irresistible impulse, which is often a reversion to mere animal instinct, with vague or imperfect consciousness at the time, obscure remembrance afterward, and under a grave paresis of inhibitory power." And again he says: "The unreasonable obstinacy of lunatics in insane conduct merely indicates that certain mental functions have escaped the regulation of volition, which is enfeebled, and are acting in an irregular and self-willed manner." I quote these expressions only to show how the phenomena of insanity impress one who has given great attention to them, and who apparently has no particular theory to support. They have reference to the most common forms of insanity.

There are other forms, by no means rare, in which the patient lives in alternating states of consciousness. In these cases the second personality is, to use M. Binet's words, "seen gradually to develop more and more, and to assume the initiative in conduct, instead of the first personality, which is temporarily annihilated."

Much more might be said in support of this view; but we have perhaps already given more attention to it than is desirable in a discussion of this kind. The existence of subordinate beings, holding an intermediate position between the *ego* and its constituency of cell-beings, is at best hypothetical; and

it may be that the extension of the analogy of the *ego* to the different departments of nerve organization in the body has carried us to a conception that is not the counterpart of reality. There are certainly many difficulties in the way of getting a clear thought of such existences. As the nervous system is all connected, and connected in a most intricate manner, it is impossible to find in it the verification of our hypothesis. And on the other hand, if we once begin to indulge the fancy of separate intermediate beings, there seems to be no limit to the multiplication of them. Every separate idea and emotion may be personified by the imagination.

I wish, therefore, in bringing this part of the subject to a close, to impress it upon the reader that the reality or the *non*-reality of intermediate beings in the human body does not affect our argument. I have introduced it, and dwelt upon it, to show that there are many reasons for believing that the principle of *being within being* has a vast number of repetitions on different scales, and that the world is perhaps organized on the principle of a hierarchy.

We come back, then, to the view with which we were previously occupied, namely, that the unity of the human *ego* embraces within its physical organization countless myriads of beings that are somehow the constituents of its being and the servants of its will. Herein is the great mystery of personality. Call it a double-faced fact, if you will; but if so, a fact both faces of which are veritable aspects of reality, and to be always treated as realities in our constructions of the world of being. Look on this

side, and the multiplicity swallows up the unity. Look on that, and the unity seems to annihilate the multiplicity.

We can never grasp the *how* of this combination. A community of beings, howsoever connected, cannot be conceived of as merging their multiplicity in one being. On the other hand, I know that I, as a unity, as an individual, as a person, exist. If I am mistaken about this, I am mistaken about everything. My belief that the constituent cells of my body are living beings is only the analogical reflex of my knowledge of myself as a living being. Yet I cannot locate this personality that I call myself. I can find no room for it in the organism. Shall I suppose that one cell is somehow specialized and differentiated, like the queen-bee in the hive, and that by an exceptional course of nutrition and education it becomes the receiver and coördinator of sensations from countless subordinate individuals? There is no rest for me here; for the cell is a composite being. Its *ego* rests upon a complexity of atoms that are as puzzling as the multitude of cells. Shall I, then, as a last resort, say: The human soul must be an atom, so connected that it combines and reacts upon the influences that reach it from countless other atoms? But, if so, what kind of an atom is the soul? Is it a specialized carbon atom? or an atom undreamed of by chemistry? This seems to be the vanishing point of inquiry on this line. In short, the mystery of the unity of being is not solved.

But, let us remember, this *unity* is a mystery only

as related to other facts. In itself, it remains the essential fact of the world, — the one thing that we are absolutely sure of. But the other fact remains also. The *ego* rests upon, and embraces within itself, a multitude of subordinate beings. These two realities, then, coexistent but not harmonized in our experience, must stand together, and as *one complex fact* express a characteristic of being as it is made known to us.

In the next chapter we shall try to trace some of the theological and philosophical bearings of this fact.

CHAPTER IX.

IMMANENCY AND TRANSCENDENCY.

THUS far we have considered the hypothesis that *the human organism is a hierarchy of beings* solely with reference to scientific requirements. We have tried to show that this is a view of things forced upon us by honest investigation. Now, I ask the reader to see in it a symbol that meets the requirements of a most important desideratum, both in philosophy and in theology. We have tried, in our earlier chapters, to show how utterly without foundation is the belief that philosophy can dispense with symbolism, and attain to a purely intellectual or abstract apprehension of God and of the universe. We have seen that one system after another has failed in the attempt to achieve this, because it has been striving for the impossible.

The difference between the method common to these systems and the method which we advocate is most clearly brought out by Spinoza when he compares his own superior knowledge of God with that possessed by Moses and the prophets. They, he affirmed, had no true knowledge of the nature and attributes of God, because God was revealed to them simply through figures, and through the pictures of the imagination. These shadows of things, he main-

tained, serve a useful purpose for the instruction of undeveloped minds, because the pictures of a lively imagination have a far greater effect upon such minds than purely reasonable considerations. But men of intellect are not shut up to this kind of knowledge. To them a higher, purer, more definite apprehension of God is possible. If they will use their God-given reason, they may rise above symbolism, and know the nature and the attributes of God as they really are.

In his view the imagination is the antithesis of reason, — its counter-worker and frustrator. The more lively the imagination, the more defective the reason. In short, imagination plays just the opposite part in his method that it does in the philosophy that commends itself to us. We hold that reason leans upon imagination at every step, that all our organized, connected knowledge of things has been gained through its use; that it is the sole constructive faculty; and that without its activity, conscious or unconscious, we could have nothing but isolated, unintelligible sensations. Reason can undo and criticise the work of the imagination. It can bring together and compare and measure its multitudinous constructions, it can select from them those which embody most fully and harmoniously the facts of experience, and it can make deductions. But it cannot turn its back on the godlike, creative faculty. It cannot by itself fathom *any* of the problems of the world, let alone the most abstruse and difficult. Whenever it seems to do this, it is only sagely taking to pieces that which imagination has slowly elaborated from the elements of experience.

The only true philosophy, therefore, we argued, is that which takes its stand on some concrete reality. We sought for the highest product of the disciplined imagination, — that is, the largest, most comprehensive reality of experimental synthesis. This we found in the human *ego*, not the abstract *ego* of the idealistic philosophy, but the actual, complex *ego* of experience; *the ego, plus all the relations that it sustains to other forms of being.* It is legitimate, and in perfect accord with the methods of science, we further argued, to use this reality, — this most comprehensive unit of experience, analogically, for the interpretation of the universe. We therefore hypothetically assumed that the universe and its essential principle, or centre, sustain something the same relations to each other that the microcosm, the little world of the *ego*, and its essential principle sustain to each other.

We had to recognize this method as one that had long been in use; and we at once encountered two well-worn and approved forms of its application, which at first sight seemed fully to preoccupy the field. But, we argued, the existence of these applications of our analogy have not exhausted its capabilities. Nor is it necessary, if we introduce others, to exclude these from our philosophy. They are useful, just as the symbols of science are useful, for the exploration of certain realms of thought, and they are *necessary* as the exponents of certain relations; but they are not sufficient of themselves to meet the requirements of modern thought, either in philosophy or in religion. Having brought the

reader to this point it remains for us to show, first, as briefly as possible, in what respects the familiar forms of symbolism are deficient as regards philosophy and religion, and then how these deficiencies are met by the view elaborated in the last two chapters.

Let us observe, to begin with, that the two most widely accepted forms of anthropomorphism, though they connote very different relations, are alike in this, that they concern themselves solely with that which is *external*. Whether we occupy ourselves with purely personal relations, or with those that exist between a person and a machine, there are always two factors conceived of as quite outside and independent of each other. In the one case individuals confront each other; and in the other it is the inanimate machine that stands over against the inventor, constructor, and supervisor. In short, the familiar anthropomorphism, standing alone, is antagonistic to the thought of the world as a unity. But the goal of all philosophy is unity. The task that it assumes is the discovery of a principle, or a conception, that shall set the totality of things before the mind as an harmoniously related whole.

Descartes dazzled the philosophic world when, from the standpoint of physics, he exclaimed: "'Give me extension and motion and I will construct the world." Here was suggested a foundation and method for a philosophy like that of Spinoza. Descartes did not himself use it as the basis of a monistic view of the world, for the very good reason that he recognized a real constructing *ego* outside of that which was to be constructed from extension and

motion. *Cogito ergo sum* had settled that question for him, and his system remained a dualism.

This dualism Spinoza undertook to reduce to unity. He essayed to get the *ego* inside the world, by mixing the mechanical and the spiritual conceptions up together. His system takes its departure from a unity of nonentity, — a *substance*, which is *one* because all differences have been thought out of it. From this fount of pure nothing he proceeds to deduce the universe with a most imposing array of method. By what exercise of reason the unity of nothingness has become transformed into the fullness of all things does not appear. It is simply assumed that the former is the same as the latter. But if we ignore this difficulty, the world that Spinoza brings out of his transformed nothingness is a *bizarre*, unreal sort of world.

It manifests itself in two great streams or categories, — *thought* and *extension*. These are the two sides, or aspects, of the one substance or God. But in neither of these categories, or *attributes* of God, do we find the real things of our experience. Mind and matter are each distorted and made to appear what they are not, in the interests of unity. From the divine power of thought proceed the definite *modes* of thought, or ideas; and from extension the *modes* of extension, or things. Spinoza represents these as two coördinate series. There is no relation between them of superiority and subordination, determining and being determined. That which reveals itself to us as thought, or mind, is no more the cause of the universe than that which reveals itself

to us as extension. In such an adjustment it is necessarily the higher concept that suffers most. Purpose, foresight, will, vanish from the world of realities. When, therefore, we come to the summing up of this most brilliant attempt to present the cosmos as a unity, I think we must say that its leading principle is mechanical necessity, and that the *non*-reality of the *ego* is its most important deduction. But even so, with mind assimilated to mechanism and with the multiplicity of the world reduced to an illusion, there is no *unity*, save that unity of nonentity with which we set out.

The philosophy of modern realism has many points of resemblance to that of Spinoza. In the place of his indeterminate substance it postulates an unknown and unknowable reality that underlies phenomena. The two modes of its manifestation are, as in his philosophy, assumed to stand on an equal footing. The mental element, or aspect of things, gives no more clue to the idea of cause than the mechanical. And, also, as in that philosophy, the mechanical idea of unintelligent determinism dominates the system as a whole. But, so far as popular acceptance is concerned, modern Realism has one great advantage; namely, the discovery and general recognition by science of certain great universal principles, or laws, that seem, independently of symbolism, to demonstrate the unity of the world. That this is a mere *seeming* becomes evident as soon as we subject the idea of a law-established unity to criticism.

The unity that seems to be involved in the exist-

ence of universal principles rests, in fact, upon an exceedingly crude symbolism, — a symbolism that represents the orderly classifications of phenomena, which the human mind has made for itself, as real entities, standing by themselves outside of and above phenomena. In short, it is a symbolism derived from abstractions. For until we assume a being of whose nature these laws are the expression, they are nothing more than the subjective formulas into which the mind of man necessarily casts its perceptions.

Lotze has given the following weighty expression to this thought. "There is nothing," he says, "besides being and its inherent states; and a universal order, before that of which it is the order has come into existence, cannot spring up between beings as a self-existent background holding them together. . . . We are apt to be led astray in these speculations, by a widely diffused usage of thought and speech that exercises no prejudicial effect on our judgments of the incidents of daily life in reference to which it has arisen. We speak of ties uniting things, of relations into which they enter, of an order which embraces them, finally, of laws under whose sway they respectively stand; and we hardly notice the contradiction contained in these notions of relations lying ready before the things came to enter into them, of an order waiting to receive the things ordered, finally, of ties stretched like solid threads — of a material we could not describe — across the abyss that divides one being from another. We do not consider that all relations and connections exist only in the

unity of observing consciousness, which, passing from one element to another, knits all together by its comprehensive activity, and that in like manner all efficacious order, all laws, that we are fain to consider as existing between things *independently of our knowledge*, can exist only in the unity of the One that binds them all together. Not the empty shadow of an order of nature, but only the full *reality* of an infinite living being of whom all finite things are inwardly cherished parts, has power so to knit together the multiplicity of the universe that reciprocal actions shall make their way across the chasm that would eternally divide the several distinct elements from each other."[1]

It will probably strike the reader that this extract suggests pantheism. Unquestionably it does, if only one side of the symbol is considered. And it is just at this point that the usefulness and truth of our analogy is most apparent. Pantheism is the unavoidable goal of all constructive ontological thinking. The philosopher is drawn into it as floating material is drawn into the vortex of a whirlpool. Yet, as is so often the case with processes of abstract thought, the thinker awakes from his dream to find himself hopelessly at odds with the real world. He is involved in a conclusion that his experience pronounces to be a lie. If the Supreme Being embraces all things, does it not follow that the individual is nothing? Is not his thought of himself as an independent centre of intelligence, deliberation, and will, a pure illusion? Can he, as part of the Supreme Being, guide his own action, or be responsible for it?

[1] *Microcosmus*, vol. i. p. 380.

Abstractly considered, he assuredly cannot. But if, leaving his abstractions, the thinker adopts, as his guide to reality, the analogy with which we assail the problem, his pantheism is at once robbed of its bane. In the mystery of the human person, he encounters a real combination that abstract thought pronounced to be unthinkable. He finds an innumerable multitude of diverse beings so united in their intricately woven relations as to form one. Each of the subordinate beings is a part of the life of that one that unites them all. But each pursues also its own life with a large measure of independent action.

A philosophy that grounds itself upon this reality of experience is not simply not in conflict with our theology, it is most helpful to it. It supplies it with a symbolism of which it stands very much in need. Why is it, let us ask ourselves, that one side of our thought of God appeals to us as the practical, and the other as the mystical, somewhat unreal side? The belief that God works in and through man is a vital and fundamental part of our theology. All our knowledge of God that comes to us through the prophets, all that comes through the Incarnation, all that comes through conscience, grounds its claim upon the truth of this view. The doctrine of the spirit that works with our spirits, that inspires, guides, and regenerates men, owns the same origin. It is a part of our religion upon which we wish to take a very strong hold, which ought to be exceedingly *real* to us.

But does it not stand in the thought of most of us as a cloudy, unsubstantial, theoretical kind of belief?

Is it not a view of things that impresses us deeply in the hours of meditation, but which slips away when we come back to the things of earth? Are we not dogged by a sense of inconsistency and paradox in view of all our anxious forecastings of the future, our carefully laid plans, and the cautious exploration of our own way through the world? And do not these strivings sometimes present themselves to us as a practical surrender of our higher beliefs? an acted expression of distrust in the Power that is able and willing to do for us more than we can ask or even think?

The antidote usually prescribed for such a state of mind is *increase of faith*, or *greater spirituality in our conceptions;* and with such prescriptions I have no fault to find. But it is one thing to point out the goal to be attained and another thing to show how to attain it. In so far as the difficulty under consideration has originated in a defective conception of the relations existing between God and man, I think we should try to overcome it with a truer conception. All we have to offer is a homely matter-of-fact analogy. But let us not despise the instrument, if it helps us. The doctrine of the Spirit, if I am not mistaken, is vague, because it has always appealed to us as an abstract, undefined, unrestricted principle. The divine efficiency in its relations to human efficiency has nowhere been presented to us in the terms of a real symbol.

The Apostle Paul, it is true, made use of a symbolism very closely resembling ours to illustrate the unity and interdependence of the church and its

members. So, also, Christ made use of the figure of the vine and its branches. But it is only recently that our attention has been called to the real individuality and semi-independence of the subordinate units of an organism; and unless we emphasize this the full value of the analogy fails to become apparent. But with this emphasis the interaction and mutual limitation of divine and human efficiency finds such a clear and concrete expression as to make it impossible for the one to overshadow the other in our thought. Magnify as we will the doctrine of the immanency of God, there is no tendency to the obscuration of man's personality. For our symbol so regulates and restricts the two truths as to make them not antithetical but complementary. That form of enthusiasm which enjoins passivity on the part of man, in order that the Spirit may have free course within him, finds no encouragement. It is the *activity* of the subordinate beings that furnishes the opportunity for the Supreme to work. It is when they are the most earnestly engaged, each one according to his special endowment, in working out their own salvation, that the higher power energizes most effectively within them. Neither, on the other hand, is it possible for us to lose sight of or underestimate the agency of the Spirit in our lives. For this, through the medium of our symbol, is represented by the overruling, determining, constantly modifying action of the *ego*.

But, it will be asked, is not the use of this analogy, so useful in some respects, embarrassing in others? Does it not tend to the conclusion that the

Supreme Being and his subjects are utterly unconscious of each other? I think not.

In the first place it is not true that the human *ego* is wholly unconscious of its subordinate beings. It has knowledge of them, both directly and indirectly. It knows them *externally*, as if they were beings quite foreign to itself; it knows them internally, through direct communication, as part of its own being. And, in this twofoldness of its knowledge, we have to recognize a most serviceable phase of our analogy. All through the Christian ages the thought of God as immanent has lived alongside the thought of a God who is transcendent. Both these aspects of being are necessary to a comprehensive theism. But their development in history has been characterized by a vast amount of antagonism. The advocate of the immanency of the Deity has felt it necessary to emphasize the deficiencies of the transcendent view, and the upholder of transcendency has pronounced the doctrine of an immanent God to be no better than pantheism. But in our symbol we find immanency and transcendency united in a living and abiding reality.

As *immanent*, it is true, the *ego* is not conscious of the separate individuality of nerve cells. It cannot discriminate between them so as to judge of their faithfulness or their unfaithfulness, or so as to feel approval or disapproval of the way in which they use or abuse their opportunities. It knows them directly only in organized groups. It deals with them as Jehovah is represented to have dealt, in primitive times, with Israel. As *transcendent*, it

knows them and ministers to them, for the most part, in the same way. Yet it has acquired, in these later days, some acquaintance with the being and characteristics of individual cells. It is able to distinguish diseased cells from normal ones; it knows how to promote the growth of the one class and how to discourage the other. All this, to be sure, falls very far short of the knowledge that we believe the Supreme Being to possess of our souls. But there are two considerations that should prevent this deficiency from being an obstacle to the use of our analogy.

In the first place the knowledge of the human *ego*, both as transcendent and as immanent, is progressive. The history of medical science is the record of this progress. And, in the second place, our consciousness, though it may afford us a conception of the divine consciousness, cannot be regarded as a measure of it. I do not mean to intimate that our knowledge of nerve cells, because progressive, is ever likely to approach in completeness the knowledge that we conceive the Supreme Being to have of us. But the fact that it is not a fixed quantity, that it is a thing of degrees, limited only because we are limited, should predispose us to postulate a far more perfect knowledge as the attribute of a far higher being. As we look the other way, that is, towards the animals below us in the biological scale, we can see clearly that, beginning with the lowest organisms, there is a gradual increase of this element of consciousness as we ascend the scale. When, therefore, we reason from man to a being higher than

man, we must keep on enlarging our thought of the extent and acuteness of this quality; and if it is the Supreme Intelligence of which we are trying to form a conception, we are justified in giving the utmost freedom to the imagination. Nay, we are *obliged* to say to ourselves, — the knowledge and the intuitions of such a being must, both in quality and extent, far exceed anything that we can imagine. They are properly represented to our minds only by the word *infinite*.

But now how does the case stand with reference to the knowledge which we believe ourselves to possess of God?

Unquestionably, if we were confined to the symbolism of this particular analogy for our conception of being, we should be poorly off. Our knowledge of cellular individuals gives us no intimation that they are conscious of the *ego* that dominates the organism to which they belong. We have, it is true, referred to these subordinate beings as if we had some knowledge of their psychical states; and it was perfectly legitimate for us so to do, hypothetically. But we have to recognize clearly that we draw nothing from them except what we first put into them. We invested them with characteristics known to us through other relations, — the relations that separate and *semi*-independent persons sustain to each other in the social organism.

It is clear, therefore, that it is only by combining the knowledge which comes to us from two quite distinct sources that we can reach a satisfactory thought of our relations to the Supreme Being and

of his relations to us. We have, on the one hand, a store of experimental knowledge gathered in our capacity as the supreme units of physical organisms, and another store of experience, of a different kind, gathered in our capacity as the subordinate units of the social organism; and each one of these is fitted to throw light on the other.

We have, then, to face about, as it were, that we may supplement the study of man as related to a vast aggregate of beings, of which he is the organic head, with our experience of his relations to that other aggregate of beings that constitutes the nation. When we do this we find ourselves confronted by a similar scene, upon which we are looking from a reversed point of view. In the first case we were on the mountain, looking down its slope to the ever-widening plain, seeing, or thinking we saw, the dim uncertain forms of diverse beings working together for their own interests, but having the centre and reason of their existence in the self-conscious unquestionably real observer. In the latter case our mountain-top has become a wide-spreading table-land, on which the observer finds himself one of a multitude of similar beings whose reality is no more a matter of doubt to him than his own. The relations which the individuals of this multitude sustain to each other are matters of personal experience. They are known as exceedingly varied and complex, yet so connected and interdependent as to suggest a unity. And when, in the effort to grasp this thought of unity-in-complexity, he casts about him for a symbol that shall embody it, nothing

offers itself save that very aspect of things upon which he has just turned his back.

This multitude of apparently independent units closely resembles an organism. But the analogy is imperfect; for, in the latter case, there is wanting that well-defined central consciousness that was the most certainly real part of the organism of his experience. As in the former case, this symbolism is luminous on one side and dark on the other. But that which was in light before is the one that is in shadow now. The dim, uncertain part of the conception is the central, dominating entity. This no man has seen nor can see. It is a reality that lives in men's thoughts, controls their actions, inspires them for noble and self-sacrificing deeds. But when we try to fix its position it disappears; or leaves as its representative only a specialized individual like the king, the prime minister, or the president. This, however, does not prevent us from cherishing the conception and living in the light of it.

When the political philosopher tells us that the nation is a living organism, that it is a "conscious organism," that it is a "moral organism," and a "moral personality," [1] it may seem to us that words are used in a highly figurative sense. But none the less are we convinced by sober reflection that this thought, and this alone, makes coherent a class of phenomena that more than any other renders the study of human history inspiring. So, too, on the other hand, when the ethical philosopher tells us that the individual man, isolated from the race, is a

[1] *The Nation*, by Elisha Mulford.

mere abstraction, that he is but a fragment of social tissue, we are certain that this expresses man in view of only one set of his manifold relations, but we cannot question the truth of the language so far as these particular relations are concerned. As a social moral being he is one of many, a fractional part of a great whole.

Thus we see that, in all our practical conceptions, man occupies a pivotal centre. He is himself the reality from which all his knowledge takes its start. But he cannot look in all directions at once. Turning his face this way, he knows what it is to be the intelligent and supreme head of a great and diverse multitude of organically connected living agents. Turning in the reverse direction, he knows what it is to be one of the multitude, and how it is possible for individuals to be fractional parts of a great unity without losing their individuality. The most evident deduction from this is that the one set of relations may be employed to elucidate the possible relations of the Supreme Being to his creatures, and that the other may be expected to throw light upon their relations to Him. But, if I am not mistaken, much more than this is contained in these two departments of experience. They touch each other at too many points to admit of such a hard line of separation. There is a continuity in them; and each throws light on the dark spaces of the other. It is, in fact, by an unconscious reciprocity of this kind that we have attained to even the most vague conceptions in either department. The social organism has been the analogical expression of the physical, and the physical of the social.

Let us pass in review some of the relations existing between the human *ego* and its subordinate beings, and see whether, as interpreted by this allied symbolism, they are capable of throwing light upon our relations to God.

We may take it for granted that the primary interest of a nerve-cell centres in itself; that self-preservation and the gratification of natural wants command the lion's share of its attention. Its distinct consciousness of other beings, we will say, extends only to those of its own kind, or of nearly related kinds. Its interests are cell interests, or at most we can hardly suppose them to rise higher than ganglionic interests. At the same time, knowing what we do of the efficiency of the central *ego*, we can hardly doubt that its determinations are represented in some way, however vaguely, in the consciousness of cells directly affected by them. When the attention of the *ego* concentrates itself upon a particular interest, the vitality and strength of the organism is directed to a special part of the brain, or nervous system; and in that part there is superabundant life, activity, and growth. Somehow, we know not how, when this concentrated attention is accompanied by constructive effort on the part of the *ego*, its activity results in a more or less elaborate organization of nerve cells corresponding to the form of thought in the *ego*.

In what guise this organizing activity appears to the agents of it we shall never know. But we may reasonably conjecture that, had they the power of reflection, it would seem to them much as it now seems

to us when our plans and strivings appear to be tributary to larger and nobler ends than those which we have set before us. We may believe that they would have a vague but profound conviction of a destiny more important than that of the individual; and that in the moments of their highest activity they might conceive themselves to be inspired.

We might further illustrate this thought by referring to the well-known power of the *ego* over the organism for the preservation of health, and for the overcoming of disease. When all goes well we say that the organs of the body are doing their work normally and thoroughly; and we little think how much of this desirable state of things is to be credited to the confident, cheerful attitude of the central consciousness. When disease comes, each organ and cell has its own way of contending against it; and if when hard pressed in the conflict there comes a great inflow of strength, it is perhaps that the *ego* has heard good news, has found a new interest in life, or has thrown the whole force of a hitherto unused will-power into the battle.

In all these cases we have illustrated to us the greatest mystery of being, — the mystery of life within life, of mind coöperating with mind, not externally, but internally and immediately. We do not understand any better than before *how* such interaction is accomplished, nor how it is possible that man, while leading a life of his own, should at the same time be the unconscious agent of a higher Being of whom he is a part. But it brings the *fact*, the *reality* of a similar relationship, on a different scale,

within the range of our ordinary experience. In one sense it remains a mystery; but, in the same sense, all the processes of nature are mysterious. It no longer has that most trying kind of mystery that inclines to doubt, — the kind that must always cling to a fact that stands alone, that can in the wide universe find no other fact to which it can be likened.

There is another class of relations, not so direct, but very intimate, that is capable of being turned to account in our theology. The *ego* is a *providence*, both general and special, to its little world of subjects. It might seem, indeed, almost as true to say that they are a providence to it. For it owes its existence and development to their increase and organization; and its present state of existence would cease except for their constant activity in the performance of functions that only they know how to perform. But from the time that the *ego* begins to be conscious of itself, as an individual with wants to be satisfied and interests to protect, there begins also an activity of the *one* for the welfare of the many. The first cry of the infant for attention is a demand of the *one* in response to the inwardly manifested clamors of the multitude that have suddenly become dependent upon it. And from this time on, the destiny of the diverse beings that make up the cosmos of the human organism becomes more and more dependent upon the intelligence, the energy, and the morality of the *ego*.

When the *ego* suffers hunger or thirst, what is it but that its myriad subjects are urging it with inarticulate prayers to consider and minister to their

wants? Unless the *ego* bestirs itself they must starve. They, indeed, are able and willing to work for their living; but only when they are directed and led by the *ego* can they work to any purpose. *It* must be the divinity that shapes their ends, that combines and directs their skill and their energies in such a way that they shall accomplish the thing that is required. And when the constantly recurring wants of the multitude are regularly met by a bountiful supply of meat and drink, it must seem to their consciousnesses somewhat as the early and the latter rain and the timely sunshine seem to ours.

Again, in view of hostile influences the lives and the welfare of this great throng of beings are largely conditioned upon the wisdom of their sovereign *ego*. They depend implicitly upon its sagacity, its vigilance, its courage, and its prudence to carry them safely through the innumerable dangers that beset their existence, — dangers which they can neither foresee nor guard against. They assist according to their several endowments. One great division is organized as a corps of observation, another has been detailed and specially trained to gather information by the use of articulate speech, and this other constitutes the auditory system; but their activities are of no avail unless the *ego*, or one of its trained representatives in a subordinate nerve centre, elaborates the information received, and gives effect to it through other sets of carefully educated, executive workers.

The higher we rise in the scale of being, the more prominently does the non-mechanical aspect of this

relationship appear, the more clearly is the function of the *ego* seen to be that of a far-seeing and overruling wisdom. In the lower organisms the quickness and the uniformity of the responses to external influences may suggest mechanism; but the more the *ego* becomes developed, the more critically does it consider the reports and petitions that are sent up by its subjects, and the more competent does it become to correct, to refuse, to modify, to reconstruct, and even to revolutionize. It becomes too wise to satisfy every appetite that importunes according to the measure of its demands. The word *discipline* calls up to the memory of every moral man numberless occasions on which he has played the part of an inflexible ruler and governor. He has found himself hardly beset by the opposing claims of diverse interests in his little world; and he has found his wisdom sorely puzzled to adjust these, to give a reasonable satisfaction in many directions so that there shall be no cause for desolating rebellions among his subjects.

All this is familiar enough to our experience and to our reflection. We have, perhaps, dwelt too long upon it already. But before passing on to other thoughts I would call attention to the use that may be made of our analogy in illustrating another side of the matter; that is, the *worth* of the subordinate individual.

Cells, it is true, are continually perishing, and their places are taken by others. They succeed each other as the generations of men succeed each other in the social organism. But while it lives, every

living cell has functions to perform, the significance of which cannot be isolated from the significance of the whole. The faithful performance of its part contributes something to the vitality of the other members of the organism, and, at the same time, to the happiness and efficiency of the *ego*. In this dual relationship we have a unique symbol for illustrating the significance of the dual statement of the moral law. The organic unity of the symbol brings very clearly before us the unity that underlies the two statements: "Thou shalt love the Lord thy God with all thy heart, and thy neighbor as thyself." Duty to one's neighbor is not something separate from and superadded to duty to one's God. It is, in the organic unity of the world, only a different aspect of the same duty. Devotion to the Supreme Being can realize itself in only one way, — faithfulness to organic relations. The immediate concern of each individual element, or being, is the discharge of its special functions as related to other subordinate beings. But this is made sublime and inspiring for man by the knowledge of his connection with the Supreme *Ego*.

But it may still seem to the reader that there is something forced and artificial in striving to combine, in our thought of the Supreme Being and his human subjects, ideas acquired in departments of experience so separate as those of the physical organism and the body politic. It may therefore be worth while to add to what has been said of the similarity and continuity of these departments the consideration that they are in all respects *homoge-*

neous. They differ not in kind but only in degree. Every important characteristic of the one is represented to some extent in the other. In the social organism, as well as in the physical, the relations which we study are relations between organized groups of nerve cells. The characteristic that specially distinguishes the relations of the social organism is that of externality. When one individual has relations with another he seems to be dealing with that which is no part of himself, but a separate entity, — a separate focus of interests. A natural chasm has to be artificially bridged by some means of communication. Contrasted with this, action within the physical organism seems to be direct, instantaneous, and accomplished without the intervention of means.

But if we penetrate beneath this outside appearance of things, we shall see that, in both cases, there is another phase of the reality than that which has preoccupied the imagination; and that when this is taken into account, the two sets of relations declare themselves to be not *essentially* different, but different only in the degree of prominence developed in certain elements. We shall be convinced that our thought of ourselves as contained within the little world of a physical organism is a false suggestion of the imagination. Our existence extends as far as our communications extend. The head of the body politic, the ideal king or statesman, whose sight extends to every quarter of an extended realm, and whose comprehensive intelligence understands all the varied interests that balance each other

within it, is a vast being compared with the day-laborer who has no thought above the routine of his occupation, though he may, perchance, have a larger body and a heavier brain.

The difference consists in this, that the statesman has brought into vital connection with his own brain the brains of a multitude of diverse individuals. If we allow our thought to be captured at this point by a contemplation of the means by which all this is brought about, we shall assuredly rest in that which is secondary and incidental, and lose sight of the essential fact. The man of high position in the state has, it is true, extended the field of his consciousness and power by means of such things as articulate sounds, printed books, letters hurried by steam from one end of the realm to another, and by the use of electric wires stretched to every town and hamlet like the nerve fibres of the body. But we must look underneath all this machinery to find the essential condition of its effectiveness; namely, the fact that the brain masses belonging to all the individuals of the nation are homogeneous, and capable of being linked together so as to pour all their knowledge into the combining consciousness of any individual whose capacity is equal to its reception. From this point of view, therefore, the externality of the relations between individuals has to give place to another phase of the truth, that is equally real, and more vital.

On the other hand, when we examine the phenomena that characterize the interaction of the elements within the physical organism, the impression

of immediateness and absence of means vanishes. There is no internal communication that does not require time for its transmission; and all the intercourse that takes place between individual elements within the organism is as dependent upon means as that which takes place outside of it. Much attention has been successfully given, of late years, to the accurate measurement of the intervals that elapse between the reception of stimuli by different exterior organs and their perception at headquarters. In short, scientific research tends continually to the abolition of those special marks by which we have discriminated between the intercourse of beings within and without the organism.

None the less, however, when we have ceased from our analysis, do the two relationships continue to represent different aspects of the connection of souls with each other. The one emphasizes the thought of separateness, — of units instrumentally connected. The other makes prominent the aspect of internal unity and apparent immediateness of communication. Limited as we are, we shall do well to make the most of our privilege of looking now upon one side and now upon the other of this dual reality.

When we think of God as our sovereign and as the ruler and director of the universe, that department of our experience that emphasizes the separateness and externality of the relations of beings to each other will provide the terms for the framing of our conception. We may picture to ourselves this vast universe as a network of means for conveying

the knowledge of itself to the Being who dwells apart, separate in his individuality, yet so connected with each one of his creatures that nothing passes unnoticed or fails to share his attention. On the other hand, when we think of our relations to the great sum of things so connected in every part as to form an organic unity, and of the one life and order that flows through all things, we have to put the thought of separateness far into the background, and concentrate our attention upon the one organic Being.

Each of these views in its own place is best. No greater mistake can be made than to array them against each other. God is immanent in the world, the very life and breath of all things. He is the great heart and brain of the universe. He is the *ego*, for whom and by whom all things exist. Every plant and flower and every animated form is an expression of some thought of his. Every event that takes place in the world is an incident in his life. But, on the other hand, God is also transcendent. He is the Supreme Being of a vast hierarchy of beings. He is distinct from all the others, and above them all. They are his ministers that do his pleasure. He is their Sovereign, they are his subjects. He is their Father, they are his children. He is their Creator, they are his instruments. He directs and overrules their activities for the attainment of ends that dwell in his thought as ideals.

Will any one still say that these two views are contradictory, that we have thrown reason to the winds in the attempt to combine opposites? We

have no argument to prove that they are not contradictory. We only point to our symbol. These opposites, if opposites they are, are combined in experience. We have found a firm basis of analogy on which to rest our most comprehensive theology. If I am entitled to think of myself as a real person, as a unity, and at the same time as a unity conditioned upon, and embracing within myself, a multitude of other living units, I am also entitled to think of the Supreme Being of the universe as, at the same time, immanent and transcendent. I am a pantheist without ceasing to be a theist. As a pantheist I cannot help being keenly alive to the deficiencies of transcendent theism. But as a theist I am equally clear as to the untruth of abstract pantheism. And if I confine myself to these negative aspects of the two views, I become, by necessity, an agnostic. But reason does not indorse such a procedure in relation to *one* class of my beliefs, unless I extend it to *every* class; and I am not prepared to relinquish all my positive views of things. The common-sense ground of life, the basis of all successful action, commends itself to me as better than this universal nescience. I resolve, therefore, to put my trust in those positive convictions that experience furnishes, believing that they are aspects of the truth as related to me and to my present requirements.

This brings us to the close of one long stage in our argument. We have developed the principles that are to be our guide in the determination of

reality. In the application of these principles, we have found good reason for believing, first, that *mind* is the essential reality of the world; and, second, that a Supreme Being sustains somewhat the same relations to the universe that the human *ego* sustains to the little world of its manifold activities. That is, we have found ourselves justified in assuming this to be the true hypothesis, so far as our examination of phenomena has extended. It now remains to be seen whether this hypothesis is sustained when a wider application of it is made.

Up to this point we have not interrogated our symbol as to its bearings upon the problem of creation. The idea of creation unquestionably owes its origin to a different symbolism. It has sprung from our notion of the relations which man sustains to objects external to himself which his intelligence has called into being. And at first sight, the implications of our analogy as well as the history of the world seem to be the flat contradiction of the assumption that the Supreme Being is also the *Creator* of the universe which He dominates. In the evolution of the individual the *ego* appears as the *result*, the latest product of the myriad subordinate beings that constitute its kingdom; and in the world-process the appearance is the same. Intelligence and creative skill are seen to be not the preëxistent cause, but the goal attained. In the next chapter I shall try to show that this appearance is not destructive of our hypothesis.

CHAPTER X.

EVOLUTION.

On the very threshold of an inquiry as to the agreement of theism and evolution we are arrested by a consideration that may be stated somewhat as follows: If the world is the result of a continual creation, slowly advancing from the simple to the complex, is it not the height of absurdity to employ the latest and most complex product, the human mind, as the symbol of the preëxisting cause of the whole process? It seems to me that there is no escape from an affirmative answer to this question, *if* the simple elements, to which the process is traced, are to be regarded as its absolute beginnings. But the habit of mind that causes the doctrine of evolution to assume the form of an exhaustive history of the world is quite foreign to any scientific statement of that doctrine.

What is there in evolution that suggests a beginning? True, its starting-point may be figured to the imagination as a *next-to-nothing*. It appears, at the end of our backward tracing of the process, as the vanishing-point of existence. But a little reflection tells us that this aspect of the germinal unit, or units, of evolution is a purely external one. The smallness of the germ and the inadequacy of our

powers of discernment make it appear insignificant; but the results that flow from it proclaim it to be the compendium of a history yet to be developed. It includes within itself a world of possibilities; and if we go to nature to ask the origin of this potential complexity, we are referred to an antecedent history, the manifoldness of which has in some way been compressed into this apparently simple germinal form.

The real evolution, the evolution of experience, that from which our hypothesis of the world process takes its rise, is found in the egg. The history of the egg conducts us back to the single cell. Do we in this find any suggestion of an absolute beginning? Not at all. It represents the beginning of a new cycle of animal life; but all the wonderful development that is possible to this speck of protoplasm dates back for its cause not simply to the cycle of development that has preceded it, but to innumerable cycles, which, taken collectively, form a more comprehensive race cycle.

In all this there is no indication of an absolute beginning; but on the contrary from the general law of continuity, that *what is true of one case will be true of similar cases, and probably true of what are probably similar*, we are constrained to the belief that there is no such absolute beginning; and that the external appearance of the beginnings of any cycle affords not the slightest clew as to the nature of its antecedents. Jevons[1] has called attention to the fact that physical science gives no coun-

[1] *The Principles of Science*, chap. xxxi.

tenance to the notion of infinite duration of matter in one continuous course of existence. The theory of heat obliges us to conceive of a limit to the present order of things. It places us in the dilemma either of believing in a creation *de novo* at an assignable date in the past, or else of supposing that some inexplicable change in the working of natural laws then took place. No matter which horn of this dilemma we take, we are held to the conclusion that the simple elements of the most comprehensive cycle known to us do not represent the beginning. There was either an antecedent state of things, or a pre-existing creator.

What, then, shall we say of that tendency of the human mind to believe that the simplest forms of things give us a clew to their beginnings? I think we must say that is only the result of a one-sided way of looking at them; and that, when all the facts are taken into consideration, reason demands the existence of a complex antecedent to account for the innumerable potentialities of relatively simple elements as much as it demands antecedent simple elements to account for that which is complex. In other words, we may affirm that the attempt to discover origins by the study of external phenomena is doomed to everlasting frustration.[1]

[1] "We drive the problem backwards, step by step, and at last have to make the confession that the primal origin remains to us a mystery, and that throughout the course of the universe we discern, at most, alternations of development, but nowhere the origin of that primary arrangement on which the possibility of this rotation absolutely depends. . . . Every orderly combination is based upon a prior combination, and varied as is this melody of the becoming,

But now let us observe that, though we are obliged to relegate the problem of beginnings to the category of no-thoroughfare questions, it is quite otherwise with the problem of cause. If we will shut out from our minds the impossible idea of a cause antecedent to all existence, it is possible for us to conduct rationally, and with a fair prospect of success, an inquiry as to the cause or causes of forms and qualities. We can do this, because we are, in our own experience, acquainted with a real causative power, — a power that plans and originates modifications at innumerable points in the ever-flowing course of physical changes. It is just because we know such a power incessantly at work in the guidance of human activities that we instinctively postulate the existence of a similar power at work in the phenomena of nature, when they express order and adaptation to ends. And, in what follows, I shall try to show that this instinct is not, even from a scientific point of view, misleading; but, on the contrary, that it indicates to us the only possible way by which we can reach a rational construction of that broadest of all generalizations, known as evolution.

Two quite different conceptions have been made use of by those who have believed it possible to explain the world process as *non*-intelligent. On the

now swelling into greater fullness, now sinking into an insignificant germinal form, it has for us neither beginning nor ending, and all our science can do is to climb up and down this interminable stem, comprehending the connection of particular portions as the result of universal laws, but never attaining to the discernment of the originating principle of the whole, or of the goal of its development." — *Microcosmus*, vol. i. p. 372.

one hand, the unconscious formative power is thought of as working from within, — as bringing about the wonders of organic adaptation determinately, in virtue of chemical and physical laws. And, on the other, the predominant shaping influence has been traced to the pressure of external circumstances upon an infinite variety of indeterminate forms supplied by the activity of organic elements and by sexual differences. These two conceptions are in a measure rivals; but they are not mutually exclusive.

Both of them, as we have intimated, are exclusive of the idea of a supreme constantly working creative intelligence. But it must be said of the former that it did not, at first, make its appearance as the absolute antithesis of a mind-caused universe. While it diverted attention from the thought of a single creative being, it recognized the half-intelligent efforts of creatures as an important determining element. The relation in which the new thought stood to the accepted idea of creation found the following expression in a book published by the philosophical club of Derby, of which Dr. Erasmus Darwin was the leading spirit: "What we call creatures were not created by God, for there is no such being as we imagine by that name, but by themselves, that is, by the process of evolution."[1] This was manifestly a reflection of Lamarck's idea that living creatures have, to some extent, the power of so responding to changed external conditions as to favorably modify their organizations as regards those conditions.

This hypothesis was based upon the following fact

[1] Moseley's *Reminiscences*.

of experience: "In every animal which has not passed the term of its development, the frequent and sustained employment of an organ, gradually strengthening, develops and enlarges it." Therefore, it was argued, as different external circumstances call out different activities for the preservation of life, the result is necessarily the development of different organs. That class of organs which, from being most used, are most nourished, tend to grow stronger, larger, and more elaborate; while those which are not called into activity are weakened and deteriorated, and finally become rudimentary or disappear altogether.

This rendering of evolution, while it did not attribute to the creature a consciously inventive and constructive intelligence, did suggest a certain amount of intelligence, — an amount that is sufficient to give direction to effort; and further, in view of the fact that this direction of effort has resulted in the formation of organs most elaborately adapted to the successive requirements of environment, there is a manifest implication of inventive intelligence residing somewhere in the creature. This implication has been recognized and followed out in a variety of ways. Murphy, Cope, and von Hartmann have each constructed an interesting hypothesis to account for this appearance of unconscious inventive intelligence. But our examination of these must be deferred. We must first consider those explanations that regard the formative influences as purely *non*-intelligent.

From the time of Lamarck the idea of evolution

made, for fifty years, but little progress; and when at the end of this chrysalis period it awoke to new life, it showed itself in a very different aspect. Darwin did not, it is true, ignore the work of Lamarck, or deny to it an element of truth. But he introduced a new principle which was completely to overshadow it. Dr. Asa Gray, in his interpretation of Darwin's position, affirms that he held both terms of the following antithesis, — "that variations are in some way excited by change of external conditions; also that they are determined by something within rather than something without the organism." But Dr. Gray also admits that Darwin is correctly represented as believing that the variations are perhaps fortuitous so far as their usefulness to the organism goes.

The fact is, Darwin was not primarily interested in what may be called the internal factors of evolution. His whole attention and ingenuity went out to the elucidation of the influence of environment upon the persistence of organisms. The tendency to vary he treated, for the most part, as physicists treat the law of gravitation. It constituted for him a never-ceasing but purposeless formative energy, by means of which life is enabled to penetrate every crack and cranny of the universe that gives it room and sustenance. What exists is only an infinitesimal part of that which begins to exist. New forms or modifications of forms are destroyed, by millions, in their clash with environment; and only those remain that chance to fall upon the open or relatively soft places of the world. The result is

somewhat like that presented by a much indented coast line. Life, with its infinite capacity for variation and adaptation, like the irrepressible water, has occupied the open spaces, and continues to wear for itself channels in every yielding portion of the environment. And as a bird's-eye view of such a coast line presents every variety of shape in the spaces occupied by water, so life has been coerced by its environment, animate and inanimate, into the varied forms that we see around us.

The method by which Darwin arrived at this conception was, in its main features, a legitimate one. Like a true philosopher, he looked about the world for some concrete fact that might be used analogically as a key to unlock the secret of Nature's transformations. Some little part of the process must be found where she should be caught, as it were, in the act of producing one species or variety from another. This he conceived himself to have discovered in the gradual transformations of form and habit which the care of man has produced in domesticated animals and plants. Actual changes, whose whole history was accurately known, could here be studied in all their stages.

The chief cause of these changes in Darwin's view was the selection exercised by man. By his intelligence man discovers that certain individuals of the same species possess distinguishing characteristics. Some of these characteristics render the animals possessing them more valuable to him than others. It is for his interest, therefore, to make the whole domesticated species resemble the few

valuable individuals. This he accomplishes by permitting these, and these alone, to produce their kind. In every generation the less favored progeny is withdrawn from the line of increase and development. Applying this to nature, he offered to science the phrase *Natural Selection*, as the expression of a principle that should be regarded as the chief cause of the existence of all established species. As man restricts reproduction to a specific channel by the suppression of the mass, so also does nature. Only, instead of man, intelligently discriminating between more or less desirable individuals, we have, in nature, conflict with environment, — a conflict that results in withdrawing from the line of increase and development those individuals and types that cannot hold their own in the struggle for existence.

Now, for a true estimate of the satisfactoriness of this account of forms and adaptations, it is very necessary that we understand fully the meaning of the words used in its statement. Let us see clearly, from the start, that the action of natural selection is altogether *unintelligent*. Unless we bear this constantly in mind the word *selection* will call up false ideas. Darwin's reason for choosing this word was his desire to signalize the connection between his principle and the fact of experience upon which it is analogically based. But the choice seems to me to have been an unfortunate one, because the selective act of man is the very element in the analogy of which no use is made. Selection always implies thought. It is a synonym for choice be-

tween things or courses of action that have been intelligently compared. No word in the language is more fully invested with psychic meaning; and no word, therefore, is less fitted to stand where it stands. It is impossible for any one to reach a true estimate of Darwin's principle till he has schooled himself to think into the word *selection*, as often as it appears, a meaning exactly the reverse of that which it ordinarily represents.

To simplify matters, then, I would suggest that the true name of this principle is *natural repression*. Or, better than this, since nature has been so much personified in our thoughts, let us say *unintelligent repression*. This, while it keeps constantly before us the two distinctive ideas of the principle, clearly marks it off from the conception of a continually operating purposive intelligence. As often as we use it we are reminded of the fact that the principle for which it stands is offered to explain the world only in so far as it can be explained by a process of undesigned limitation or exclusion.

Having settled this, let us ask, first, does the *non*-inclusion of the element of intelligent selection vitiate the analogy for the purposes of Mr. Darwin's hypothesis? I cannot see that it does. The result is attained, in both cases, by precisely the same means, that is, the withdrawal of the mass of individuals from the line of increase and development. How that withdrawal is brought about is irrelevant to the hypothesis. It seems to me, therefore, that the reasoning at this point is sound. There is a process going on in nature similar to that by which

man protects and improves certain varieties of animals and plants. In the latter case, the preserved are those that fit the wants of man; in the former, they are those that fit environment.

We are ready, then, for the next question, which must be, *To what extent* does this principle explain the forms and adaptations that we find in nature? Does it, as in the case of the domestication of animals, effect only the accumulation and preservation of certain developed characteristics? Or may it be credited with the origination of all the elaborate adjustments of organized life? It might be claimed that the principle of continuity justifies us in making the latter assumption. If there is at work in nature a principle that makes for the survival of the fittest, why should not the repression of all those variations that are useless to the species have produced just such adaptive combinations as those we see about us in living organisms?

Our answer is that no continuity of the principle of repression can begin to account for the *existence* of the forms repressed. In the production of new varieties of domesticated animals, man finds ready-made, for his selective act to work upon, a world of elaborately organized and delicately adjusted forms. Now if we assume the existence of a *positive constructive principle* in nature, — a principle that makes for a continually increasing complexity in organization, then we shall have something like a true analogy on which to base our explanation.

But this is just what the advocates of the su-

premacy of natural selection deny us. For, if there be such a constructive principle at work, then the principle of selection or repression must be assigned to an exceedingly subordinate place. A power that makes for a continually increasing complexity of organization must, of necessity, give rise to very definite forms. Every organization is a balance of forces that are delicately adjusted to each other. If such a power exists, the power that modifies these definite forms by the repression of a part of them sinks into relative insignificance. We may still be greatly interested in it as a principle that intensifies the separateness of forms; but we can never think of it as the form producer. We cannot see things as Wallace see them, when he says: "Whatever other causes have been at work, Natural Selection is supreme, to an extent which even Darwin himself hesitated to claim for it. The more we study it, the more we are convinced of its overpowering importance, and the more confidently we claim, in Darwin's own words, that it has been the most important, but not the exclusive, means of modification." [1]

How is it, then, it may be asked, that a philosopher like Wallace, who has spent a lifetime in the study of the facts from which the hypothesis of evolution is deduced, can see them in this light? I conceive that it is to be explained by the aptitude which men of special gifts often display of seeing things in special ways. It seems to me that all those who claim so much for the principle of repression have permitted the principle of *variation*

[1] *Darwinism*, p. 444.

to completely hide from view the principle of *positive construction.* They seem to take it for granted that when they have demonstrated that unlimited variation is a universal fact, they have summed up all, or nearly all, that is not due to repression. But simple variation carries with it no principle of progress. It does not, of itself, lead to new and higher combinations. All that we mean by the word *organization* is quite outside of and beyond the sphere of mere variability. And the great stress that has been laid upon the fact of variation has diverted attention from the constructive force that varies, much to the prejudice of accurate thinking.

This appears very clearly, if I mistake not, in Weismann's account of the causes of variation, — an account which lays a heavier weight than any other upon the much-burdened shoulders of natural selection. Let us look for a moment at his rendering of the matter. Weismann traces all variations in the beginning to contact with environment.[1] So long as the animated world was composed of unicellular organisms, there was no bar to the origination of race peculiarities by the transmission of those individual characteristics that were acquired through response to environment. An amœba, when nutrition and growth have reached a certain stage, reproduces itself by making a fair and equal division of all its elements to identically constructed halves of itself; and then, after existing for a brief period as a double organism, it separates and becomes two. Neither one of these two is the original

[1] *Essays upon Heredity*, Oxford, 1889, p. 278.

amœba more than the other. Each is the progenitor in a somewhat depleted condition. Every variation, therefore, that has been produced through contact with environment is transmitted.

But this method of originating persistent variations is, Weismann maintains, one that no longer operates after race evolution has passed the unicellular stage. For when organisms become multicellular there ensues a differentiation of cells and a division of labor. Only one particular class of cells, that which contains the germ-plasm, has to do with reproduction. These germ cells form a caste so absolutely separated from all the others as to remain, so far as their constitution is concerned, practically unchanged by any influence proceeding from the external world.

It would seem as if evolution must, at this point, come to a standstill. But no; a new method of variation appears in the field. Amphigonic, or sexual, reproduction introduces a new series of differences springing from the *union* of those diverse elements that have been originated and accumulated in unicellular organisms by contact with environment.[1] There can be, it is said, no end to such variations, because no two individuals are just alike. And although the door is shut against the entrance of new variations from the outside, the various characteristics that were acquired in the unicellular stage present themselves in new combinations, every time a new individual comes into the world. Even the individuals that proceed from a single pair are not

[1] *Essays upon Heredity*, p. 272.

alike. For the germ-plasm of each progenitor has within it the power of reproducing not simply the characteristics of immediate ancestors, but those also of countless generations that have preceded them. Some of the progeny, therefore, may inherit the peculiarities of near, and others those of remote, ancestors. In other words, all the variations that take place in the process of evolution, from unicellular organisms upward, are fortuitous, so far as benefit to the organism is concerned; and natural selection has to perform the whole work of adapting them to environment.

Now let us remember that life has to be raised from the form in which it exists only as a single cell through all the stages of increasing complexity that have culminated in man. Natural selection cannot achieve this wonder of constructive organization. For it is, as we have seen, nothing but a principle of repression. Can variation accomplish it?

We must assume that when variation from external sources came to an end, the individuals that modified each other's offspring in sexual reproduction were essentially homogeneous. What differences they had were the differences of comparatively simple organisms of the same species. Should we not naturally suppose that the continual mingling of the reproductive elements of individuals of the same species would have a tendency to neutralize each other? But let us suppose the opposite, — that, owing to the tenacity with which the germ-plasm retains all the variations that have ever found their way into it, all the original characteristics survive,

and, by their endless combinations, produce an infinity of differences for natural selection to work upon. Still, all these differences are on the same plane, and the suppression of a part of them can never raise them above that plane. To accomplish this we must have an additional principle, — a principle of construction that makes continually for a more complex organization, that builds up organisms by appropriating new elements, which it coördinates and binds together in subordination to more and more comprehensive units.

Let us then proceed to postulate the existence of such a principle, and ask, is it possible, with its aid, to account for the evolution of all the adaptations of the world without an adapting intelligence? There are those who think so. Herbert Spencer and G. H. Lewes in England, Nägeli and Eimer in Germany, may be cited as representatives of those who hold the two following propositions: First, a very important influence in the determination of forms proceeds from internal factors, acting in definite directions. Second, these factors are purely mechanical and chemical.

Mr. Lewes states his view in a general way as follows: "The evolution of organisms, like the evolution of crystals or the evolution of islands and continents, is determined, *first, by laws inherent in the substances evolved*, and, *second*, by relations to the medium in which the evolution takes place." [1] In opposition to the hypothesis that natural selection, acting externally upon evolved forms, has deter-

[1] *The Nature of Life*, sec. 124.

mined all the established characteristics of organisms, he calls attention to the many analogies that exist, not simply among animals at the extreme ends of the scale, but also between animals and plants where the idea of a direct kinship is out of the question. "Such cases," he says, "are commonly robbed of their due significance by being dismissed as coincidences. But what determines the coincidence? If we assume, as we are justified in assuming, that the *possible directions* of organic combination and the resultant forms are limited, there must inevitably occur such coincident lines."[1] The abruptness with which exceedingly complex structures enter the process of evolution points, he argues, to the same conclusion. "The sudden appearance of new organs, not a trace of which is discernible in the embryo or adult form of organisms lower in the scale, — for instance, the phosphorescent and electric organs, — is, like the sudden appearance of new instruments in the social organism, such as the printing-press and the railway, wholly inexplicable on the theory of *descent;* but it is explicable on the theory of *organic affinity*."[2]

This idea of organic affinity is derived analogically from what we know of chemical affinity; and the *development*, as well as the structure of an organism, is said to be determined by the affinities of its constituent molecules. On no other principle, Lewes affirms, can we explain such facts as that, from the same external medium, the Articulata assimilate chitine, the Molluscoida cellulose, the Mollusca and

[1] *The Nature of Life*, sec. 117. [2] *Ibid.*, sec. 121.

Crustacea carbonates of lime, and the Vertebrata phosphates.[1]

Eimer is in substantial agreement with Lewes as to the points above mentioned. It is the response of organisms to light, air, warmth, cold, water, moisture, food, etc., that has given rise to the manifold variety of the organic world and to the origin of species. To quote his own words: "Just as in inorganic nature from different mother lyes different crystals separate, as even simple mechanical shock can produce dimorphous crystallization, so crystallize, if I may so express myself, in the course of ages, organic forms to a certain degree different, out of the same original mass. . . . But just because the form of the organism depends upon physico-chemical processes, it is, like the form of the inorganic crystal, a definite one, and can, when modification takes place, only change in certain definite directions." [2] With regard to the origin of species, he states his belief as follows: "The variation of species takes place not in all kinds of directions irregularly, but always in definite directions, and, indeed, in each species in a given time, in only a few directions." [3]

Nägeli differs from Lewes and Eimer in attaching very little importance to external influences, and in throwing almost the whole stress of evolution upon internal factors. He holds that climatic conditions

[1] *The Nature of Life*, sec. 130.

[2] *Organic Evolution.* By G. H. Theodor Eimer, Professor of Zoölogy and Comparative Anatomy in Tübingen. (Translated, 1890, by J. T. Cunningham, M. A., F. R. S. E.) Page 23.

[3] *Ibid.*, p. 20.

and changes of nutrition have no effect on the transformation of species; and he affirms of natural selection that it has had its effect in separating and in defining, but not in forming the strains. "Not a single phylogenetic pedigree," he says, "owes to competition its existence; but the several pedigrees, through the extermination of intermediate forms, stand forth more clearly and more characteristically." [1] In his view, internal causes depending on the nature of the organic substance effect the transformation of strains in definite directions in accordance with a law of "improvement." That is, the internal causes work continually toward a greater complexity and greater "*perfection*" of organization, — a perfection not simply of the relations which the parts of the organism sustain to each other, but also of the relations which the organism, as a whole, sustains to the outside world.

It is only when we reach this idea of a principle that makes for an increase of complexity and perfection that we have postulated in full the conditions which we hold to be necessary as the basis of accurate analogical reasoning from the selective act of man in the domestication of animals. Nägeli, however, denies that the existence of such a principle of improvement makes it necessary for us to infer the operation of an intelligently adapting power. "Superficial reasoners," he says, "have pretended to discover mysticism in this. But the principle is one of mechanical nature, and constitutes the law of persistence of motion, in the field of organic evolution." [2]

[1] Quoted by Eimer, p. 18.

[2] Quoted by Eimer, p. 14.

Now I wish to call particular attention to the fact that while there is, among these eminent evolutionists, agreement as to the purely mechanical or physico-chemical nature of the causes at work, there is the most profound disagreement as to the sufficiency of each other's explanations of the process. Eimer introduces his own views with the announcement that they are "essentially in contradiction to those of Weismann and to those of Nägeli." Why do I call attention to this? Not, I beg to explain, because I wish to draw the inference that all attempts to discover the methods by which organic forms are produced are valueless. It is our privilege to know more and more about the secrets of the instrumentalities in the midst of which we live; and we owe a great debt of gratitude to those who unveil them for us. Nor do I mean to intimate that we ought to expect perfect agreement among those who frame hypotheses for the guidance of further investigation. But if I think I can show that the nature of the objections urged by these scientific experts points to a radical defect that is common to them all, there is a good reason why I should emphasize the fact that each one of them is condemned on the ground of insufficiency.

I maintain that all these explanations are true to a certain extent, that each one of them teaches us something about the instrumentalities of the natural world; but, on the other hand, that they are all false in that they assume that there is nothing but instrumentality. They are unsatisfactory, and always will be unsatisfactory to the human under-

standing because they rule out the one and only element that can render them satisfying, that is, *intelligent guidance.* Such schemes may indeed seem to those who make them to fill up the requirements of the case; but they fail to gain the assent of investigators who judge them from a somewhat different, though equally scientific, point of view. And the cause of such failure is, as it seems to me though not to them, the exclusion above mentioned. Thus, when Nägeli finds it necessary to postulate a principle of "improvement" and affirms it to be simply the outcome of "the law of persistence of motion in the field of organic evolution," he seems to himself to have fully accounted for it. But of this same principle Eimer says: "Although he explains it as a mechanico-physiological principle, I hold it to be a kind of striving toward a goal or teleology in face of which a directing power, conceived as personal, existing outside material nature and ruling all things would seem to me fully justified." [1]

The point of this criticism seems to me to be simply this: physical laws are not sufficient to account for the existence of such an internal principle of definite, adaptive organization as that postulated by Nägeli. And the same may be said of Weismann's objection to it, namely, that "we do not gain anything by adopting Nägeli's theory, because the main problem which organic nature offers for our solution, viz., adaptation, remains unsolved." [2] That is, a principle that operates *mechanically* from within

[1] *Organic Evolution*, p. 53. [2] *Essays upon Heredity*, p. 298.

does not explain adaptation. I certainly agree with both these criticisms. A mechanical principle working from within does not explain adaptation, neither does it explain that progressive unity, through the subordination of parts to a central being, that is the distinguishing fact of organic evolution. But while agreeing, I would suggest that the futility of the explanation arises not from the fact that it works *from within*, but from the fact that it is *mechanical*.

Both of the critics seem to themselves to have made the physico-chemical explanation more reasonable when they have shown how large a part of the process must be attributed to the action of environment. But is this really so? Eimer finds analogies derived from the phenomena of chemistry and crystallization very satisfying. But in what way do these help us with regard to adaptation? The transformations of chemistry certainly give a basis of reality for the assumption that organisms change, become something different from what they were, by reacting upon outside elements. They also afford an intelligible answer to the question, Why do the changes that take place in organisms follow certain definite directions? But they supply no answer to the question, Why do these definite changes, while conforming to the laws of chemistry, conform at the same time to the equally definite, but altogether different requirements of an exceedingly complex organism? The interests, so to speak, of chemical laws have nothing in common with the interests of a delicately balanced organism in the midst of a heterogeneous and, in many respects, adverse world.

In other words, when such an organism is called upon by environment for an important readjustment, where, in general laws, do we find a cause or causes for the very particular response that is required?

Again, what is there in these analogies to account for a continually increasing complexity in organisms? Eimer seems to himself to say all that is necessary to be said on this point when he refers us to the phenomena of *growth* in response to external stimuli. But growth is known to us as a succession of cycles that are the repetition of each other. There are, it is true, variations. But where, in the facts of simple growth, do we get any foundation for the idea of the evolution of progressively higher forms? Weismann shares this difficulty with us, for he says it is impossible to comprehend how the varying external conditions should produce a continual advance in evolution.[1] But is it any more possible to comprehend, as Weismann would have us, how this continual advance should result from the repression of any number of the forms produced by the interbreeding of the simplest organisms?

Does it not appear most probable that the real defect in each of these explanations is the same, namely, the *non*-recognition of intelligent guidance? In each case the results reached in nature are quite out of relation to the analogies brought to bear upon them, unless we supply a concept derived from our subjective experience. The fact that these analogies do satisfy individual minds may be accounted for by the consideration that specialists, more than

[1] *Organic Evolution*, p. 55.

most men, are capable of regarding one aspect of the world as if it were the whole of it. This capability is one that is superinduced in them by a long-continued contemplation of the purely physical or instrumental relations of nature. But limitation to one view is never, even in the case of specialists, perfect, because in self-consciousness they are familiar with another aspect of things; and this other aspect obtrudes itself when they turn from their own constructive work to the criticism of the constructions of others. In short, to find an intelligence to which the mechanical explanation shall be perfectly satisfactory, we must draw upon our imaginations. We must postulate a being who, while very acute in his perception of outside realities, is absolutely devoid of self-consciousness.

But now, let us observe, to such a being the purely mechanical explanation of all that *man* has accomplished would be equally acceptable. To us, or at least to most of us, who know that the world of man-made mechanism has been called into existence by the inventive intelligence of minds that have, with set purpose, devoted themselves to the accomplishment of definite ends, it would certainly seem a hopeless task to explain its origin from any other standpoint. But one having no knowledge whatever of intelligence would never feel the need of it in his explanations. He would rest satisfied in the belief that everything beyond the limits of his observation is as purely mechanical as that which has been submitted to it; and he would be justified in making his knowledge of physical sequences go as far as

possible in framing an explanation of the phenomena, leaving the gaps to be filled in by future discoveries. He might epitomize his conclusions as to the rise and development of machinery something as follows: —

The human organism is a complex of closely integrated and mutually sustaining forces; it therefore not only holds its own as against the pressure of other forces, but it tends, through its action upon environment, to organize some of these in its own favor. Much of its contact with these outer forces tends simply to the destruction of that which opposes. But in the infinite variety of changes some new combinations will be formed that are useful to and harmonious with the more powerful combination of the organism, and thus become closely associated with it, — attached, as it were, to its system. But these newly formed outworks of the organism have no great stability. They are continually giving place to new forms. For a continuation of the process that brought them into existence tends on the one hand to increase the complexity, usefulness, and stability of some; and, on the other, to throw off some, because better combinations have rendered them useless, and therefore obstructive.

Further, as the human organism is an integrant part of the greater social organism, any addition that has gained a considerable degree of stability through its usefulness tends to multiply itself. That is, it makes its appearance at many points in connection with individuals or groups of individuals. And at some of these points, the constituent units

of the greater organism become specialized in large numbers for the elaboration of external mechanism, as nerve cells are specialized in the lesser organism. Closely associated together, as cells are associated in ganglia, these specialized units serve the organism by converting material that is indifferent to it into appliances that greatly extend its power.

The cause of the origin and persistence of machines might then be summed up something as follows: They have had their beginnings in chance combinations, resulting from the contact of the organism with environment. The organism tends to attach to itself every combination of forces that, so to speak, locks in with its own system; and these are duplicated and multiplied in the social organism in obedience to the principle that makes for equilibrium, or a balance of forces. The facts that support such an explanation are facts of universal significance. First, *advantage to the organism* is always, without any exception, the condition of the retention of any outside mechanism. For although it may not in every case be possible to demonstrate *how* this and that portion are useful, the evidence from the great mass known to be useful is overwhelming. Whenever one form is replaced by another the increased efficiency and productive power of the new form is in almost every case apparent.

It is true that, sometimes, old forms continue to exist alongside of more efficient new ones; and this, at first sight, would seem to be the contravention of our principle. But further scrutiny will always show that the old form is more useful, under certain

circumstances, than the new. Mowing-machines have to a very great extent displaced hand-scythes. But scythes are not altogether excluded, because mowing-machines are not available on very rough lands. Thus, the very circumstance that seemed to form an exception to our principle turns out to be a corroboration of it.

Another fact of universal significance is that all machines, except the first, have come into existence by means of a succession of slight improvements, each one of which has been a modification of previously existing forms. As we follow down the series that results from an arrangement of machines in the order of their complexity, we shall find that this corresponds, in its successive stages, very closely to the stages of another series made by arranging machines in the order of time. The simplest were the first to appear, then those that were a little less simple, then those that were somewhat complex, and so on. This law, it is true, is not so absolute in its application as the previous one. *Advantage to the organism* governs everything; and in some cases this involves retrogression from a complex form to one that is somewhat simpler and more efficient. But such cases are only back-eddies in the general stream of development. It is also true that we cannot verify in every case the assumption that all the improvements in machinery have resulted from slight modifications in preëxisting forms. But as this is, without question, the general rule, no adverse argument can be constructed from these exceptional cases. We are not in possession

of all the facts, and we are justified in presuming that, if we were, these apparent exceptions would prove to be no exceptions at all.

It will, of course, be urged that this account of the origin and growth of machines is only a caricature of the explanations of evolution given by those who exclude intelligence from the process. Certainly it is not an exact parallel to that doctrine. But we maintain that it represents them truly in two very important respects. In the first place, it illustrates without exaggeration the disadvantages under which we labor when we essay the explanation of the phenomena of nature from the standpoint of outside spectators. And, in the second place, it is a perfectly fair presentation of the method of reasoning pursued by those who treat any combination of unintelligent agencies as the sufficient cause of all the adaptations by which living things are fitted to their environment. There is in it the same mixture of fact and fancy, of rational deduction and baseless assumption.

We have maintained, all through our argument, that the imagination is the pioneer faculty in all our speculative constructions of reality. But we have insisted that it can be a reliable guide only when it takes its departure from some unquestionable fact of experience. When we glibly attributed the origin of useful machinery to chance combinations brought about by the encounter of the organism with environment, we were using the imagination lawlessly; and, if brought to book, we should have been unable to point to any mechanical principle or experience

that would support such an assumption. It is in no respect otherwise when the adaptations of the natural world are referred to mechanical causes. No mechanical laws hitherto made known to us are adequate to the production of such results.

Weismann very properly emphasizes the rule that we are not justified in "assuming the existence of a new and totally unknown principle until it has been proved that known forces are insufficient for the explanation of the observed phenomena." But this is precisely what the advocates of the above hypotheses are doing. What is the problem? I will take Weismann's statement of it: "The main problem which the organic world offers for our solution is the *purposefulness* seen in organisms."[1] Now what kind of a mechanical or chemical working is that which, in connection with Natural Selection, affords a sufficient explanation of this characteristic? Not one, I will venture to say, that is known to science. On the contrary, it is a new and totally unknown principle. And those who assume it are deliberately turning their backs upon a very well-known principle that is in every way a satisfactory explanation of the purposefulness seen in organisms.

Intelligence is, in our experience, the full and adequate cause of the adaptations that have found a place in the little world of man's influence. Why, then, should we set aside this cause when we are speculating about the adaptations in nature? If, in the infancy of human thought, too free a use was made of this analogy, is that a good reason for now

[1] *Essays upon Heredity*, p. 257.

altogether excluding it from our interpretation of nature? Science, by revealing a world of instrumentality, has not gone to the bottom of the matter, and if we rest in the thought of a multiplicity of subordinate agencies as if there were nothing beyond these, it is only that we are bewildered, — that the plenitude of our knowledge has overpowered our judgment.

The fact that we can nowhere detect the points at which intelligence exerts its shaping influence is no argument against the reality of such influence. We cannot detect the points at which the modifying power of the human mind is brought to bear upon the apparently closed circle of physical causes. And, if foresight and intellectual guidance are properly regarded as the cause of human adaptations, they are just as properly regarded as the cause of the adaptations in nature that so closely resemble them. The chain of mechanical events is just as accommodating in the one case as in the other, and not one whit more so.

It is easy to say that the relations that man sustains to what we call his planned constructions are as purely mechanical as any other relations, and that they only *seem* to have an exceptional kind of efficiency. But even supposing this to be true, it has to be recognized that the *apparently* exceptional efficiency — *the belief in himself* — gives rise to very real and very important exceptional behavior on the part of man. In view of relations that appeal to him as purely mechanical he conducts himself in an entirely different way from what he does in view

of relations that he conceives to be intelligent or spiritual. He cannot live without making this difference. Remove from his life the conception of spiritual relations and man would cease to be man. If, then, from the beginning until now, the requirements of living have indorsed and enforced the recognition of the truth of this conception, is it likely that we are on the right track when we exclude it from our interpretation of the universe? And, on the other hand, if the unity of the world, the repetition on different scales of the same principles, has been the guiding thought of all scientific progress, is it not eminently scientific to make intelligence play an important part in our interpretation of nature?

This is not the same as to say that it is reasonable to trace every particular event to a special decree of a supreme intelligence. It is not the equivalent of that view that prompted Mr. Darwin to ask: "Do you believe that when a swallow snaps up a gnat God designed that that particular swallow should snap up that particular gnat at that particular time?"[1] To hold such a doctrine we must follow the construction of an irresponsible imagination in preference to the analogies of human experience. If we cleave to that experience as a guide, we shall necessarily include in our thought a vast amount of instrumentality, — a world of subordinate agencies. The development of this view will be the task of the next chapter.

[1] Darwin's *Life and Letters*, vol. i. p. 284.

CHAPTER XI.

CREATIVE INTELLIGENCE.

WHAT is it to create? May we not say simply, To create is to originate? Surely, this touches the distinctive idea of creation, but it is not of itself sufficient. We must add another element and say, *Creation is designed origination.* But what is it to originate? Do we mean absolute origination, creation out of nothing? or is the term properly applied to that relative kind of origination that consists in forming, from elements already in existence, new combinations? I think we ought, in practical discussions, to use the word only in this latter sense; because this is the only kind of creation that our experience tells us anything about.

Men never could have had a thought of God as the Creator of the world, were it not that they had first known themselves as creators. In the earlier part of our argument we labored to prove that this knowledge of ourselves as causative agents is no delusion, but the truth of truths, the reality underlying all realities. We are therefore constrained to treat it with the greatest respect; to examine it carefully, to find all that it contains, and at the same time to keep conscientiously within its limits. In doing this, one of the very first discoveries we

make is that the idea of *creation out of nothing* finds no indorsement. As we know the world, there is an order of nature, there are uniformities of action, continuity of motion. When we create we do not act independently of these, but, so to speak, by their permission. We guide them into channels which they, without us, would not have taken; and so, through their constancy, accomplish our special ends.

When, therefore, we try to rise from our own experiences to the thought of a Supreme Creator, we abandon our base of reality unless we retain the *order of nature* as an inseparable part of our conception. Our analogy obliges us to postulate a Being who is not only coexistent with that order, but who also works by means of it, controlling, modifying, and harmonizing its elements, according to a plan known in its fullness only to himself. It would be preposterous for us to say that the order of nature is *not* of God's creating; it would be equally preposterous for us to affirm that it is. We know ourselves to be a part of that order. We know, at the same time, that we are efficient, originating parts of it. Within a limited sphere, we control, alter, reconstruct, the elements with which we come into immediate contact. Expanding this thought to the Supreme Being, we think of Him, not, indeed, as *a part* of the order of nature, but as the living head and centre of that order. It is a part of Him, as our bodies are a part of us. His thought and his initiative are constantly working in and through it. We can no more think of its beginning than we can

think of his beginning. He and it are, for us, two aspects of that which eternally *is*.

A second discovery revealed by a careful examination of our analogy is that in philosophical discussions we have habitually neglected to make use of some of its most significant phenomena. When we reflect upon man as a creator we naturally send our thoughts abroad to gather, as into one picture, the various external evidences of his inventive skill. We think of the cities he has built, of the objects of art with which he has stored them, of the mechanism he has constructed, the books that he has written. But all the time we are thus engaged we are overlooking and neglecting a realm where the creative power of man is most really at work. We are, in fact, occupying ourselves with the secondary, comparatively remote results of his constructive power, oblivious of the fact that all his primary, immediate creations are to be sought and found elsewhere.

No mechanism has ever been put together, no work of art constructed, that was not the outcome of an antecedently created organization of nerve substance in the brain of some man. It is not strange that we have overlooked this department of man's activity, for we have no immediate knowledge of the transformations and combinations that are continually taking place in the nerve-cell world. The very existence of the minute organisms that compose it has only recently been made known to us by science. But now that we are no longer ignorant of them, it behooves us to make the most of the assist-

ance they are capable of bringing to speculative thought.

Some of the greatest difficulties that have hitherto attended our efforts to make use of man's creative experience for the solution of the world problem are directly traceable to our preoccupation with the external evidences of his skill. Every human construction, viewed externally, is the work, more or less immediately, of men's hands. But nature seems to disclose to us a Being who creates without hands. To imagine a world-creator, therefore, we have had to depart from our analogy, to assume something that was quite foreign to all our experience. Or, more correctly speaking, our conception, excluded from the realm of real experiences, has fastened itself upon an imaginary one; and the Creator of the world has appeared to us in the guise of an all-powerful magician.

But the moment we turn our attention to what goes on within us, the magic of the magician is nothing to the reality of our every-day experience. Creation without hands is seen to be the rule, not the exception. The brain of every man is a cosmos, a world of plastic elements that are to a very considerable degree the instruments of his intelligence and will. In this world he thinks, and, obedient to his thought, nerve cells are modified, and cell combinations are formed, that would otherwise have no existence. Notwithstanding the smallness of these elements, the world in which they energize is just as real as the world of forms by which we are surrounded. The cerebral forms have, it is true, no

resemblance to our thoughts or to their counterparts in the external world; but we can have no hesitation in affirming that they are equally complex, equally elaborate in the adjustment of their parts to each other, and that they have the same unity.

We do not know *how* man creates. He makes constructive efforts with certain definite ends in view, and elaborate nerve combinations are the result. If what he desires to attain comes to him suddenly and with a high degree of completeness, his consciousness of creation is very much less than when he has reached it after many efforts, some of which have been failures. In the former case he is inclined to attribute the combination that has so suddenly made its appearance to an agency other than his own. It is said to be an inspiration. But in the latter he is very conscious of labor, of much ineffectual striving, of fatigue, of progress, of final success as the reward of many efforts.

What he experiences at such times finds its analogy in the processes that make for the external realization of his thought. A sculptor, for instance, sets out to model a statue. The first attempt may be so wide of the mark that he reduces it to the shapeless lump of clay out of which it was formed. But when he has made a beginning that is more or less to his mind, he goes on altering and modifying, reconstructing parts, but retaining the model as a whole. Thus he reaches a stage of perfection that, if not satisfying, is all that appears to be attainable. So with the inventor of machinery. If it is at all elaborate, the perfected result is the one combina-

tion that succeeds many other less perfect combinations that have been tried and found wanting. In each of these cases the series of forms that has found its way into the external world is the expression of only a few that have been chosen from innumerable combinations called into existence by the creative but also selective and destructive ego.

It is not otherwise with what we call the acquirement of faculties. From a mechanical point of view, an acquired faculty is an exceedingly complex piece of mechanism that has been constructed by the intelligently directed efforts of the *ego* to whom it belongs. Every skilled performer on the piano has constructed for himself such a mechanism not only by a long succession of efforts, but also by the suppression of innumerable faults to which some of these efforts have given rise.

Further illustration of this point can hardly be necessary. The facts we have reviewed are palpable, unquestionable facts of every-day experience; and the bearing of them upon the larger problem of creation seems to me to be almost equally clear and unavoidable. If this world is an organic unity, if all its parts are related to each other, why should we hesitate to follow out the analogy which is pressed upon us from every side by the evidences of adaptation? Why should we not think of the whole protoplasmic world as a specialized part of the greater organism upon which the Creator impresses his thought, as a man does his upon the congeries of nerve cells that he calls his brain?

At any rate, we must assume that the reader has

followed us thus far, for we wish to take him much farther, — to persuade him that man is not simply an originator of new combinations of nerve cells, but that he is a creator of living species that faithfully reproduce their kind from generation to generation. We have already seen that the mechanical symbolism that is commonly resorted to for a conception of these combinations is not only imperfect but essentially misleading, and that it is only from biology that we can learn their true nature. Nerve cells, this science tells us, are living beings, individual existences, which admit of classification, according to their functions, into species; and each one of these species reproduces its kind, like other unicellular organisms. It is owing to this continuity, this permanency of type in each species of nerve cells, that our faculties are preserved to us without alteration, notwithstanding the destruction of the originally modified cells.

Now the greater part of these cells come to us with their characteristics already fixed. The various species which constitute what we call vital organs, a full quota of which every normal human being inherits, have been formed somehow during the evolution of the race, and they remain the same throughout life. But in every one there is a class of brain cells that is susceptible of further differentiation and organization; and it is by means of these that the human creative faculty is enabled to accomplish its ends. The *ego*, so to speak, impregnates these cells with specific characteristics which are often faithfully transmitted from generation to

generation during the life of the individual. We know this to be the case, because acquired or superinduced characteristics continue to appear in the activities of the person with whom they originate.

We are not oblivious of the fact that a large class of cell modifications are made without the intention of the *ego*. Some of the phenomena of memory point to changes thus registered in the cerebral ganglia. And the wonderful persistence of these illustrates, in the most marked way, the fact of transmitted cell specializations. The experiences of childhood often reappear most vividly in advanced old age. What we wish to show is that *intentionally* produced specializations follow the same law. The skill of a musical performer, of one who has learned to write, or of one who has acquired a foreign language, remains, although the brain cells originally educated may long ago have perished.

We have, then, within the realm of human activities, a true instance of the creation, by intelligence, of specialized organisms, — organisms that, subject to further modifications from the *ego*, reproduce their kind like the different species of animals. Turning back to our analogy with this thought we are more than ever impelled to the belief that the world of exceedingly diversified but closely related living forms, plants, insects, birds, fishes, beasts, and men, each producing after their kind, are the more or less direct results of the divine creative thought working upon the protoplasm of our planet.

Does this seem to the reader a fanciful and

unnecessary conception? As fanciful, I have no apology to offer for it. All new adjustments of our thought are fanciful until we get used to them. But as unnecessary it certainly calls for defense. I do not mean that we are to argue over again the question as to the necessity of recognizing the presence of a creative intelligence in nature. We must consider that point as settled. But even when it is granted that intelligence has been a factor in creation, it may be urged that there is no necessity of postulating a Supreme Being. The creative faculty of man does, it may be said, afford us a clue to the mysteries of origination. But this clue ought to be followed not into a higher, unknown realm, but into that realm of known reality that is open to our observation. Pursuing this course, we may discover that the adaptations, of which nature is full, are the outcome, not of a single creative mind, but the cumulative product of innumerable little minds. At least, before we invoke the agency of a higher being, let us satisfy ourselves that the results we contemplate could not have been brought about by adjustments intelligently formed, through countless generations, by the very beings whose transformations we study. There is much to be said for this view, and we must give it our careful attention.

That we may approach it understandingly, let us premise that the intelligently formed organizations of brain substance that we have been considering may be legitimately regarded as *organs* of the human body. Like the other organs of the body, they are made up of specialized elements that have been

brought into particular relations to each other for the discharge of very definite functions. The nature of the functions discharged by these organs leaves no room for doubt as to their elaborateness and permanence. By their acquisition individuals are, in some respects, separated from each other as widely as different animals are separated by the peculiarities of species. We speak within bounds when we say that the performances of a great instrumentalist are as impossible to one not cultivated in music as flying is impossible to an ox; and if the nervous organization on which the musician's power depends could be seen by us in its separateness, as we see the wings of a bird, we should probably have no hesitation in saying that he had acquired an *organ* not possessed by the generality of men.

This conclusion is emphasized when we reflect further upon the wonderful independence displayed by these newly formed combinations of nerve substance. For instance, when a man who has been absorbed for a long time in turning over and over certain thoughts that have not the remotest connection with any kind of external activity, suddenly, and almost without consciousness, seizes a pen, and with great rapidity and variety of motion transfers those thoughts to paper, there can be no question as to the existence within him of an organ of great complexity and independence. There is here an instrumentality, — we may call it an organism or a mechanism, — that, when the vital forces are turned on, works with an ease and regularity almost equal

to that of the printing-press that subsequently covers other sheets of paper with similar characters expressing the same thoughts.

If, then, we have found a class of organs, the origin of which is well known to us, the scientific method requires us to ask at once, Does the knowledge of this one class indicate the secret of the origin of all classes? The intelligence of the individual is the creative cause of these organs: can it be that the great process of organ-forming, that has been going on from the advent of life on our planet, has at every step been due to the same agency? The only possible way of establishing such an hypothesis is to show that the organs intelligently formed by one generation are inherited by subsequent generations.

It is at this point that the attempt to trace the origin of organs to the intelligence of the creature meets its first great difficulty. But we shall not find it insuperable. The most cursory investigation, it is true, tells us that most if not all of the organs formed by man's intelligence are *non*-transmissible. The child of a man who has spent a part of every day of his life in writing inherits apparently no trace of the organization which was like a second nature to the parent. If he learns to write, he must begin where his father began, and build up from the simplest elements an organization for himself. The single letters have to be constructed at first with great care and no little effort; then they are joined together; word-forming, spelling, sentence-construction, and so on, follow each other, till at last he has

acquired that which nature refuses to bestow as a free gift. If the child had been descended from illiterate parents, he would have been able to acquire the art, and perhaps with equal facility.

The apparent universality of this law of limitation has led some eminent writers, as for instance Weismann and Ribot, to the conclusion that the process of evolution, subsequent to the unicellular stage, has not been affected by the acquired characteristics of individuals. But there is something to be said on the other side. Though it should be admitted that no human being has ever bequeathed an intelligently formed organization to his posterity, it does not necessarily follow that the same rule holds good for animals lower in the scale. Evolution gains its ends by a variety of processes; and under changed conditions it not infrequently abandons one method for another, though the end attained be the same in both cases. Thus reproduction by division is succeeded by amphigonic reproduction; water-breathing by means of gills gives place to air-breathing by means of lungs.

Now let us remind ourselves that the acquirements of the human individual do become the acquirements of the race. They are inherited by succeeding generations, though the transmission is effected by a different process from that which is technically called *heredity*. Let us observe, moreover, that a very striking resemblance exists between the stages of these so very different processes. For the sake of comparison, we will outline these stages in parallel columns: —

Physical or Enforced Heredity.	*Intelligent or Optional Heredity.*
I.	I.
The appearance of an organic change as the peculiarity of an individual.	The appearance of the crude beginnings of an art as the creation of an individual.
II.	II.
The spread of this organic peculiarity by enforced heredity till there appears a species characterized by it.	The spread of this primitive art by intelligent communication till it becomes the property of the race.
III.	III.
This newly acquired organization is again modified by other individual changes which in their turn become the property of the species.	The art, thus made common property, receives further individual developments, which again become the property of the race.
IV.	IV.
Each individual of a species becomes possessed of this accumulation of ancestral organs by an abbreviated recapitulation of the stages through which the species has passed.	Each individual who becomes the possessor of this art acquires it by an abbreviated recapitulation of the stages that characterized its development in the race.

Now, since the lower animals have not yet reached the stage at which the inheritance of newly acquired

organs by intelligent communication can be relied upon, may it not be that among them the transmission of intelligently formed characteristics is effected by enforced heredity? Many facts are adduced by careful observers of domesticated animals that seem to point to this conclusion. For instance, it is said that young shepherd dogs, the very first time they are taken to pasture, will sometimes herd sheep with as much skill and discrimination as if they had been long and carefully trained to the business.[1]

Have we not here a case of intelligent acquisition made subject to the law of enforced heredity? There can be no question but that the art of herding sheep was, in the first instance, intelligently acquired by an ancestor of the young dog that now practices it instinctively; and we are justified in assuming that this art or habit, wherever it appears, is the outward manifestation of an internal structure or organ that has been built up by successive combinations of nerve elements. When, therefore, we have in the young dog all the external manifestations of this elaborate organ, we conclude that the organ has, so to speak, formed itself in virtue of the naturally inherited growth tendencies of the individual. It is as if the roots of this faculty remained in the race. The acquired arts of men are like the annuals that grow and flower luxuriantly in our gardens for one season, but perish, root and branch,

[1] For other instances of inherited acquisitions, see Romanes's *Mental Evolution in Animals*, pp. 193–199, and Eimer's *Organic Evolution*, sec. vi.

when winter comes. But the art of sheep-herding has, to some extent, become perennial in the collie race. It springs up in each successive generation without any seed-sowing or planting. When the proper season or stage in the ontogenetic series has been reached, it is there bearing its natural fruit.

Does it not seem as if we had here the key to what has ever been one of the most interesting and baffling of all the mysteries of nature? That which we call instinct has always appeared to us as the product of a well-known process, minus the process. It is the fruit of the tree of intelligent experience without the tree. Now, then, let us make the hypothesis that all instincts have originated in the same manner, — that they are all the outward expression of special organizations that have been inherited from ancestors who formed them intelligently.

Up to this point we have been treading a tolerably firm path; but from this on, the footing is softer and softer, while the load we carry is augmented at every step. As we descend the zoölogical scale, the evidences of a general intelligence diminish rapidly, while we continually encounter instincts, the nature of which seems to preclude the *possibility* of intelligent origination. For instance, how is it possible that insects, that never have anything to do with their progeny after the egg stage, should have acquired by experience the wisdom that seems to guide them in depositing their eggs? Many of the provisions they make for their young imply, not simply a long look ahead, but a truly scientific skill in the choice of means for the supply of wants that have as yet no existence.

The sphex forms a burrow in which to deposit its eggs. This, when all is ready, is to be closed carefully to make it safe for the larva that is to be hatched in it. But, before the closing, a very important matter has to be attended to. Just as a vessel bound on a long voyage is stored with provisions, so the burrow in which the young of the sphex is to begin life is stored with food. But more remarkable yet is the means by which this is accomplished. The food laid aside for the larva must be animal food, and it must be alive. It must be alive but not active, for it must remain several weeks in the burrow before the hatched-out larva is ready for it. Now there are several species of this insect, and each species remains faithful to a particular kind of prey. One provides spiders for its offspring, another beetles, another crickets, and another caterpillars. And the marvelous thing is that each species knows just where to sting its prey so as to paralyze without killing it. If it is a spider, the sting is delivered unerringly upon the large ganglion which is the nerve centre of the spider. If it is a beetle, the sting finds the main aggregation of nerves by passing through the membranes between the first and second pair of legs. If it is a cricket, the end is attained by piercing three nerve centres; and if it is a caterpillar, a series of from six to nine stings is given, one between each of the segments of the body.[1]

Another class of instincts that is particularly trying to our hypothesis is that which characterizes the

[1] Romanes's *Mental Evolution in Animals.*

neuters among bees and ants. These are the individuals of the colony that as workers astonish us by the elaborateness of their apparently intelligent operations. But the males and developed females, from whom the neuters spring, never exhibit the instincts that appear in their progeny. It is needless to multiply examples of this kind, nor will I weary the reader by commenting upon those given. To some zoölogists they appear to be insurmountable. Romanes, following Darwin, believes that "many instincts are displayed by animals too low in the zoölogical scale to admit of our supposing that they can ever have been due to intelligence."[1] He also regards the case of neuter insects as an insuperable obstacle to our hypothesis. He therefore divides instincts into two classes having quite different origins. Those that may be traced to the intelligence of ancestors form a numerous and very important class by themselves. But no less important is the other class, that owes its origin to natural selection working upon purposeless activities that chance to be useful to the organism.

Mr. Lewes, on the other hand, recognizes no impossibilities. With a supreme faith in the law of continuity, he commits himself to the belief that all instincts have had an intelligent origin; or, to put it in his own words, that "instinct is organized experience." His statement of the argument is as follows: "Since we know that many instincts, which are manifested as soon as the organisms have acquired the requisite development and are appropri-

[1] *Mental Evolution in Animals*, p. 191.

ately stimulated, were originally acquired in ancestral experiences . . . and since we know that instincts, like many diseases, are due to registered modification of structure transmitted by heredity, and since those registrations are themselves acquired results, the conclusion that all instincts are acquired becomes irresistible." [1]

Theodor Eimer apparently reasons in the same way, for in speaking of bees he says: "If we suppose that their collection of honey has become mechanical, that the bees no longer reason consciously in performing this labor, yet we must assume that originally they began to collect honey from reflection and reasoning; for otherwise they would not have come to do it mechanically." [2]

The fact that the instincts of the workers are not exhibited by their immediate progenitors is, for him, no bar to this belief. He calls attention to a well-recognized tendency in some of the lower animals to a specialization of organs that sometimes results in separation. Locomotive organs, sexual organs, digestive organs, in some cases remain connected with the body by a peduncle, while in others they become entirely detached and swim about independently. A trace of this tendency remains, even in the higher animals that are descended from species in which there was no separation of sex. For, to use his own words, "wherever a male and female sex exists, there is no perfect individual. The two parts absolutely belong to one another, and only form a whole

[1] *The Limitations of Knowledge*, sec. 21 *a*.
[2] *Organic Evolution*, p. 425.

together." [1] In accordance with this principle, he believes the different orders represented in the hive to have been derived from a primitive form that combined within itself all the functions of bee life. From this primitive form the specialized forms have sprung; and each of these develops a particular part of the organization as its inheritance. The reproductive members never develop the instincts of workers, but they go on transmitting them, as it were, in sealed packages, from primitive ancestors, by whom they were intelligently formed.

So much for this controversy. I have laid both views before the reader, because there seems to me to be reason in both. On the one hand, I agree with Romanes, that the intelligence of the creature becomes a less and less satisfactory explanation of the phenomena as we descend the zoölogical scale, and that it finally gives out altogether. In so far as it is satisfactory it enlarges our conception of the sphere in which the organizing intelligence of the creature is effective. But even if we should agree with Lewes and Eimer that all instincts, ordinarily regarded as such, are the result of ancestral experiences, we should still be far from accounting for the origin of all organs.

I say *ordinarily regarded as such*, because the history of a very important class of organs which we have not yet tried to account for seems to me to point clearly to another series of instincts. These, because they manifest themselves in the embryo, we may call embryotic. All the organs which succeed

[1] *Organic Evolution*, p. 426.

each other in the growth of the fœtus are the result of certain very marked differentiations that occur at specific epochs in its history ; and each of these new departures seems to me to be caused by nothing other than that which in the more mature individual we call instinct. We may certainly affirm that the beginning of each new differentiation is a function of the embryo, or of some part of it, at a particular stage of its existence. This new function appears precisely as new instincts appear in *post*-embryotic life. It is, on the part of the embryo, an impulse, in response to a particular conjunction of internal and external states, to do something that it has never done before. There is also in each of these unprecedented acts the same appearance of intelligence that we have observed to be the distinguishing characteristic of instinct; for each one leads to a new organization that is wonderfully adapted to the future well-being of the individual. It may at first sight seem a sufficient explanation of these phenomena to refer them to *heredity*, to say, — the offspring develops each organ because its ancestors developed it. But we have to remember that there was a first time for each one ; and it is for this we are trying to account.

Let us, for a moment, go back to the fact from which our analogy takes its start. When the habit of sheep-herding appeared fully formed in the young collie, we assumed the existence of a peculiar nerve combination to account for the peculiar trait. This nerve combination we were able to explain only by the assumption that a tendency to vary in an un-

usual manner had somehow been wrought into the ordinary round of structural changes. When the usual repetitions of heredity had reached a certain stage of cerebral organization in the collie, there ensued a combination that was quite foreign to former natural growth.

Our knowledge of collie history enabled us to trace this tendency to vary in a particular manner to the intelligent experiences of ancestors. But how, we must now inquire, does this help us to account for the successive adaptive variations that have resulted in the formation of the vital organs of the collie? We cannot ascribe them to the intelligence of the creature unless we are prepared to attribute to creatures very low in the scale a far higher degree of foresight and of inventive skill than has ever been attained by man. What shall we do? Two courses are open to us. We may follow Romanes in the assumption that when we have come to the end of creature intelligence, we have come to the end of all intelligence. Or, holding fast by our analogy, we may seek in a higher sphere of being for the intelligence that we cannot find in the creature; an intelligence that works through the creature in virtue of organic relations that it sustains to it.

If we follow the former course, we deliberately part company with the law of continuity. After having found a true cause of a very peculiar class of phenomena, we, on encountering certain difficulties, abandon it absolutely and assign phenomena of the same nature to causes that are totally different. The case is even worse than this. For we give up our

ascertained cause just when we are most in need of it, that is, when the phenomena of nature seem most urgently to demand intelligence for their explanation. We have to assume that a particular class of results, which in our experience flow from intelligence and intelligence only, are to be found in their highest perfection in a department of the creation from which intelligence is absent. But if we take the other alternative, extending the principle of Lewes and Eimer to the conclusion that wherever the *fruits* of intelligence are clearly manifested we must trace them to *intelligence*, we shall remain faithful to the law of continuity, and at the same time have a true and sufficient cause for the phenomena under discussion.

No violence is done to the law of continuity by seeking in a higher sphere of being the intelligence that has disappeared from the lower. On the contrary, we are in complete harmony with that law. We are finding in nature just that which this law constrains us to expect.

We have seen that the human organism is a hierarchy of beings dominated by the *ego*. We have seen that each grade of beings within this organic whole leads its own life, not altogether a routine life. We have seen good reason to attribute intelligence to these various orders of beings according to their place in the scale of organization. There is an intelligence of the cell, there is a higher intelligence of the ganglion, there is above these the intelligence of the *ego*. Certain functions of the organism are referable to the first, certain others to the second, and

certain others still to the last. When the *ego* exerts its creative power, it does not work independently of the subordinate beings, but *through* them, producing modifications by virtue of its organic union with them. Ought we not, then, to expect to find the evidences of such a hierarchy of intelligences in the natural world? If the cosmos is a unity, and an organic unity, analogy justifies us in the hypothesis that it is constructed on the same general principles as the organisms with which we are acquainted.

But we have no sooner made this hypothesis than we see that it is open to a most serious objection, namely, that it involves the reversal of the history of evolution. In the course of evolution the higher organisms are uniformly the product of the lower, not the lower of the higher.

We have encountered the substance of this objection at a previous stage of our argument; and we will say here, as there, that it rests upon an impracticably narrow view of the problem. It has force only when we confine our attention to the one cycle of evolution that is made known to us in organic life. We have seen that cosmic evolution presents itself to us simply as a succession of connected cycles, to which there is no conceivable beginning or ending. But now let us observe that the phenomena of organic life present us with an additional thought. Instead of a mere succession of cycles, we have a gradation, — cycle within cycle. This comes to our relief when we try to form a conception of the universe as an organic whole.

It is clearly out of the question, when using the

microcosm of the *ego* for the interpretation of the cosmos, to make any use of the history of the *becoming* of the *ego*. As a created being, the fruit of a process, it can give us no help for the solution of the world problem. We must be content to regard it only in its supreme and final aspect. We must see in it only the container, the ruler, the creator. We postulate from the start that there is a real unity to the cosmos; and our quest has been to find some reality that shall stand as a symbol of, and a voucher in experience for, this conception. Such a reality must of necessity be itself the reverse of final, the reverse of absolute. It must be a part, an included member, of the great whole. But its relations to that portion of the great whole which it includes and dominates may be used analogically to give us a knowledge of the final, absolute being that includes all beings and all cycles.

We have already considered some of these relations, and have seen that the *ego*, when once installed in its realm, becomes the author of processes of evolution that bear a most marked resemblance to the great one that we study in nature. We have seen that, in every department, it has from the simplest beginnings elaborated the most complexly organized results by means of successive modifications. We know that to each one of these departments the *ego* has come with an already developed intelligence, and with a consciousness of certain ends to be attained. Why, then, should we not postulate a being that has come to the creation of the whole protoplasmic order in the same way, — a being who is as much greater

than that order as man is greater than any of the particular ideas that he develops?

Science is never weary of reminding us that the universe is a homogeneous whole, — that the very same elements underlie all its different manifestations. Is it, then, likely that the supreme reality of the world, *intelligence*, is confined to such an insignificant part of it as the protoplasmic order of our planet? Is it not far more reasonable to think of that order as related to the fullness of the supreme intelligence somewhat as a particular science or art is related to the sum of man's intelligence? We know that there is a very real cosmos outside of what we call the animated world. We know, moreover, that there are myriads of worlds in which the protoplasmic order can have no existence. Why should we not believe that the same mind that has expressed itself, on our planet, in the forms of the animal and vegetable creation has had innumerable other developments antecedent to and contemporary with this one?

But again, our analogy may be attacked from a different quarter. It may be said that it is degrading to our thought of the Creator, since it carries with it the inference that the Almighty employs the same laborious, tentative methods that characterize man's constructive efforts. It certainly does carry this inference; but before we decide that such a conception is degrading to our theism, would it not be best to look the facts of creation squarely in the face, and ask whether or no they indorse the inference? If there is any truth in evolution, the whole

history of the world proclaims a Creator who compasses his ends by gradual approaches, in very much the same manner that man compasses his.

There is at every stage the same appearance of *non*-finality. One form seems to have led up to another form higher in the scale. There is just the same suggestion of improvement, of the abandonment of simple adjustments, for those that by their elaborateness make possible a fuller, more extended life; and each stage in the process makes those antecedent to it look, in some respects, inferior. When, therefore, we turn from contemplating the succession of forms in nature to examine the history of the growth of any human science or art, we cannot but feel that we are looking upon the same thing on a smaller scale. In both cases the stages of progress present the appearance of having been thought out consecutively.

In the preceding number of this series we had occasion to show how the history of man-made mechanism could be set forth as an evolutional process. We saw that, if human machines are classified in the order of their complexity, this series will correspond in its successive stages very closely to the stages of another series made by arranging machines in the order of time. The simplest were the first to appear, then those that were a little less simple, then those that were somewhat complex, and so on. That is, human creative skill has given rise to a series of graduated forms that seems to be the parallel of the great series that we find in nature. Now if, because of this similarity, we can logically infer that both

series are the outcome of intelligence, are we at liberty to ignore the fact that the intelligence that has wrought in the one case appears to have pursued precisely the same methods that it has pursued in the other?

As to the feeling that such a conception of the Creator is less noble than the traditional one, I will only say that it seems to me wiser, as well as more respectful, to frame our thoughts of the Supreme Being upon that which He has revealed of himself in his works, than to frame them upon any flights of fancy, the outcome of our notions of what ought to be. We are not required to postulate a Creator who is limited in all respects as we are. The universe, even as known to us, proclaims a Being whose foresight, wisdom, and power are infinite as compared with ours. But the study of his methods indicates that He is limited in some way. It may be by the nature of the ends for which He creates. It may be by the means which He employs. It may be by both.

Nor does such a conception seem to me to antagonize the view of God that is given in the Hebrew Scriptures. If we derive that view, not from isolated expressions that appear in the exalted phraseology of worship, but from the main drift of the whole, the testimony of nature is seen to be in profound harmony with the utterances of inspired men. From the beginning of the Bible to the end of it, the Almighty is represented as engaged in a great conflict with powers that tend to thwart Him, — powers that He does not annihilate, but that He

overcomes through a long-drawn-out historical process.

The reverse of this conception, a purely imaginative one, has proved for some minds a serious hindrance to belief. One of the great obstacles to the recognition of an overruling, modifying intelligence in nature has been the supposed necessity of referring everything, if anything, to the intelligence and will of the Supreme Being. Mr. Darwin found himself at times powerfully impelled to recognize the agency of an intelligent mind in the adaptations that were apprehended by him with a clearness that has been possible to few men. Yet he was deterred from yielding to this evidence because he could not believe that some things were designed and others not. But in the light of our analogy, such an objection disappears altogether. Man, at the centre of a very limited world, designedly shapes much of his life; but the bulk of it is not the result of his thought. The order of nature — the working-out of the lives of all the lesser intelligences in their semi-independence — constitutes the great volume of the stream of being that flows through him and around him. May we not, in like manner, believe that the intelligence that is above ours makes modifications at innumerable points, while leaving most of the details of the great conflict to be determined by those whose lesser intelligence has been given them for that very purpose?

Our analogy does not encourage us to trace all the vicissitudes of creatures, their failures and their

successes, their deteriorations and their gradual advances in prosperity, to the direct agency of a superior being. The working-out of its own salvation by each creature seems to be a part of the plan. But, on the other hand, we are not warranted in excluding this direct agency from any part. We cannot say with any certainty that it is manifesting itself at this point or at that point. Much less can we be sure that it is absent wherever its traces are not apparent to us.

Let us observe, moreover, that this view of a supreme power that is restrained, or that restrains itself, does not in any way conflict with the thought of a Being whose knowledge is unlimited, whose consciousness is coextensive with the universe of which He is the centre. But, at the same time, we are not permitted to treat this last conception as one that is necessarily true. A study of the same phenomena, by which we have been led to the thought of a being who works *directly* only here and there in the process, has led others to the thought of a being or beings whose intelligence, though unquestionable, is wholly without consciousness. We shall examine this hypothesis in the next chapter.

CHAPTER XII.

THE PHILOSOPHY OF THE UNCONSCIOUS.

The phrase *unconscious intelligence*, as applied to creative skill, is one that looks very much like a contradiction in terms; yet it has played a conspicuous part in the philosophy of our day, and cannot be ignored in a discussion like the present. Not that I have any wish to ignore it. On the contrary, the view of the world, of which it is in part the expression, seems to me to have contributed, in no small degree, to the building up of a real theism. It has been useful in somewhat the same way that smoked glass is useful when we are looking at the sun. It has enabled philosophers to construct a natural theology with a calmness that is generally supposed to be impossible to the advocates of a personal, self-conscious Deity; and the results reached are in no whit less valuable because unknown quantities have been employed in working out the problem.

Meaningless as the phrase above mentioned appears to be, it unquestionably has a meaning for those who make use of it. Its very incoherence points to some deadlock in thought, some apparent contradictoriness in facts, that tempts to a contradiction in terms for its expression. In the preced-

ing chapter we examined at some length a class of phenomena that seemed to be the exhibition of the fruits of intelligence in the absence of intelligence. Instinct, we said, has all the appearance of the outcome of a well-known process, minus the process. We saw, also, that the same appearance attaches to every important organic change that is seen to be in the direction of improvement. When an animal becomes possessed of new and elaborate adaptations that make it and its descendants better able to cope with the exigencies of life, there is a strong suggestion of intelligence somewhere, but it is impossible to discover in the immediate factors any subject to whom the intelligence can be referred.

As an explanation of this difficulty, the hypothesis which we are about to examine assumes that there are two kinds of intelligence, and that the whole cause of our mystification is to be traced to the circumstance that we have not been trained to the recognition of one of these kinds.

However impossible the idea of unconscious intelligence may at first seem, we are obliged, it is said, when we study the phenomena of our own minds, to admit that it *must be* not only a reality, but that it must be a much more common and potent factor in our history than conscious intelligence. Our primary perceptions, for instance; how is it possible to account for these without postulating a process of unconscious reasoning? We do not ordinarily refer them to such a process, because they seem to us to be the simple, direct communications of the external world to our minds.

We open our eyes and knowledge flows in. There is no suggestion in this experience of an elaborate antecedent process. But none the less is it certain that every one of our perceptions is a composite product that has been reached, first, through nerve processes, and, second, through sensations. And, furthermore, it is certain that something — some transforming and coördinating power — has wrought these many nerve processes and sensations into the unity that we call a perception. This unity is of a psychic nature. It is a judgment, a conclusion. How has it been reached? By what means have these nerve processes been wrought into sensations, and these sensations again into those perceptions that constitute the ready-made and apparently simple elements of our conscious mentality?

There is, it is urged, but one way known to us by which such results can be reached; the way, that is, by which still higher results are attained in conscious mental processes. In the realm of the conscious, a conclusion is always the product of many independent perceptions that have been fused into unity by *a process of reasoning*. This is the one and only known form of mental activity by which such unity can be reached. When, therefore, we have, in what we call a simple perception, such a unity *presented* to us, we must conclude that it has been elaborated by a process of reasoning that has not entered into our consciousness, — a process that may therefore be called unconscious reasoning.

Again, it is said, we every day compass the ends of life by activities that involve a great multitude of adjustments that do not enter into consciousness. We can neither walk nor eat nor speak without making innumerable intelligently adapted movements to meet the ever-varying demands of life; yet the greater part of these are made without our bestowing a thought upon them. Unconscious adaptation, therefore, is an unquestionable reality of our experience.

And again, all thinkers are familiar with a class of phenomena to which the name of unconscious cerebration has been given. The thoughts that would not arrange themselves satisfactorily yesterday, no matter how variously we changed their relations to each other, are, after an interval of complete oblivion of their relations, revealed to our consciousness perfectly organized. What has brought about this result, if not an unconscious continuation of the mental effort that we were previously carrying on consciously?

Who can say that these are not all of them well-known phenomena, and that the inference deduced is not a natural and reasonable one? We certainly do not question the truth of the representations; but as to the inference, we have to say, first, that it rests upon a most unnecessary assumption; namely, the assumption that the intelligence that is outside of my consciousness at a given time is and always has been outside of all consciousness. This, I say, is an unnecessary assumption in view of the fact that we are not isolated, independent beings, but ex-

ceedingly dependent beings, whose intelligence and consciousness is, in every case, intimately bound up with that of other existences. The present self-consciousness of each individual is, indeed, a thing absolutely shut up to itself. But it is continually penetrated by results that have been elaborated elsewhere, — sometimes in its own past states of consciousness, sometimes in the consciousness of other beings.

In view of these considerations, we are certainly justified in making the hypothesis that all the phenomena that are properly referred to intelligence as their cause *may be* accounted for as the results of the *conscious* intelligence of some being.

In the preceding chapter we gave at some length our reasons for believing that much of the appearance of intelligence in the phenomena of instinct is due to the existence of organized nerve substance; and further, that the organization of this was effected by *intelligence* at various epochs in the past history of the race. The same reasons lead us to a similar belief with regard to those perceptions that we have been considering. They are the outcome of nerve combinations that were at some time created by conscious intelligence. Every child comes into the world with a most elaborately organized brain. It is ready to respond in a great variety of special ways to the stimuli that are sure to come to it from the external world; and the first result that reaches the child's consciousness is, though an exceedingly composite thing, at the same time a unity, — a unity that has been reached, not by any process of uncon-

scious reasoning, but by virtue of the congenital organization of the brain. [1]

This congenital organization we will for the present regard as the product of a totally unknown cause; and if organization never advanced beyond this point, we should have no special clue to its cause. But it does not stop here. The first sensation of an infant leaves a permanent impress upon its brain; and every succeeding sensation modifies it still further. At first these inflowing sensations seem to arrange themselves in some sort without any assistance from the subject of them. But ere long the legitimate ruler of the brain, the *ego*, begins to take an active part in the work. As a conscious, intelligent agent it discriminates between its sensations, it groups them, it analyzes them, it recombines them; and many of these critically made combinations become, so to speak, fixtures in the brain. That is, they leave a definite organization of cerebral elements, — elements that all work together, and produce the impression of unity when they become active.

[1] "*The first sensation which an infant gets is for him the universe.* And the universe which he later comes to know is nothing but an amplification and an implication of that first simple germ which, by accretion on the one hand and intussusception on the other, has grown so big and complex and articulate that its first estate is unrememberable. In his dumb awakening of *something there*, a mere *this* as yet (or something for which even the term *this* would be perhaps too discriminative, and the intellectual acknowledgment of which would be better expressed by the bare interjection 'lo!'), the infant encounters an object in which (though it be given in a pure sensation) all the categories of the understanding are contained. *It has objectivity, unity, substantiality, causality, in the full sense in which any later object or system of objects has these things.*" — Professor William James, *The Principles of Psychology*, vol. ii. p. 8.

It may seem to the reader that we are assuming a great deal when we refer the origin of these fixtures to the *conscious* intelligence of the *ego*, since by far the greater part of the cerebral adjustments by which we live have been made so early in life that we have no remembrance of them. But the assumption seems less when we consider that the process by which these earlier combinations have been formed is very clearly revealed to us in the new combinations that we are obliged to make in adult life as often as we encounter absolutely new objects.

I go into the house of a friend, we will say, and see on the table an object the like of which I have never seen before. It looks at a little distance like some kind of fruit. But none of my brain combinations that relate to particular kinds of fruit will have anything to do with it. They fling back the whole responsibility of the unfamiliar object upon me, the *ego*. Unless I am satisfied to remain in ignorance, it is necessary for me to do some intelligent work. I ask the question that in my childhood was so often on my tongue, "What is it?" I am told that it is a persimmon. If I never know anything more about it than this, I have gained a new brain combination; for in the future, whenever the word *persimmon* is mentioned, the picture of this object lying on the table will come into my mind. But if I am permitted to carry my investigations further, to take this new fruit into my hand, I shall discover whether it is light or heavy, rough or smooth, rigid or yielding to the touch. If I may open it, I shall become possessed of another large

class of characteristics; and if I may taste it, of still another. And having got thus far I may go still further, to ascertain on what kind of a tree it grew, what are the conditions of its fruitage, and so on almost without limit.

All the time that I have been thus engaged I have been constructing in my brain a new set of nerve combinations, — *new*, but not isolated. No surgical operation is required to graft them upon former combinations. They are the outgrowth of them. My knowledge of fruit in general, and much of my knowledge of particular kinds of fruit, have participated in my construction of the persimmon annex; and this, when completed, is not simply an extension of my former knowledge, but an organic part of it. I shall never have to do this work over again. The sight of a persimmon, or simply the repetition of the word, will bring back the whole train of characteristics in what seems to be a single perception; and that without any conscious reasoning on my part. Subordinate agents, with intelligence and consciousness of a kind very different from mine, stand ready, trained and waiting, to do that work for me.

The second class of phenomena, mentioned as suggesting unconscious intelligence, yields readily to the same explanation. The adjustments which are made in the performance of habitual actions are the result of the proficiency of trained subordinate agents. There may be much variety in the environment to which the adjustments have to be made, without the occurrence of anything absolutely new. These educated nerve combinations have had

to deal with the very same exigencies of a varied environment many times before. The most important and difficult part of their training has been the acquisition of the power to respond quickly and appropriately to certain requirements that come upon them as suddenly as the fire alarm.

A tennis-player does not go through a process of unconscious calculations with regard to the direction and velocity of every ball that is shot at him. But by long practice he has educated certain of his faculties to work together with a quickness and precision that would be quite impossible to the *ego*. In the case of a very skillful player, little more is required of the *ego* than the persistent, never-relaxing will that shuts out every disturbing influence and pours the whole stream of nerve force into particular channels. Any calculation of the *ego* in the moment of supreme effort would be the reverse of helpful. During the time of their activity, the educated servants are as undertaking as the little camera that comes to us with the assurance, "You press the button, we do the rest." And yet there is no doubt about the origin of their skill. It has all been derived from the consciously made adjustments of the intelligent *ego*.

But now let us notice the fact that these educated servants are not always up to the work required of them. The brain cells of the thinker, for instance, become weary; their responses to each other's signals are not accurate; they do not make connections at the critical moment; and the *ego* finds itself obliged to relinquish for the present a task which it

feels that it ought to be able to accomplish. But the despair of the night is often followed by a sudden and brilliant success in the morning. After a peaceful sleep, the wearied workers of yesterday spring to their interrupted task with the vigor of youth, they respond with alacrity to the constructive efforts of the *ego*, and the connections that could not be reached are now completed as if by magic. This, I believe, is a partial explanation of that third class of phenomena that we noticed as suggesting unconscious intelligence.

What, then, is our conclusion? We have seen that much of the brain organization that serves the purposes of intelligence can be traced to the *ego*, in its past states of consciousness and constructive effort. But what shall we say of that congenital plexus of brain elements upon which, as a foundation, all this additional work of the *ego* has been built? This question has been somewhat elaborately considered in the preceding chapter, and we need here only refer to the conclusion reached; namely, that the only rational way of dealing with this problem is to hold tenaciously to the true cause that we have found in that stage of the process that comes within the range of our experience, and use it analogically for the explanation of that which was prior to our experience. We saw that it was impossible to account for the infant brain by the hypothesis that it represents the organized experience of generations of ancestors. We therefore argued that we are justified in projecting our discovered cause into a higher sphere, — of postulating a supe-

rior intelligent being with whom we are organically connected, somewhat as the subordinate agents of the *ego* are connected with it. To this source also we must refer the unexplained part of "unconscious cerebration." The struggling *ego* is visited and assisted, at times, by the same Intelligence that in the beginning — at the origination of the species — girded it for the battle of life.

Returning now to the hypothesis of unconscious intelligence, how does the case stand? Shall we say, here are two explanations, either of which accounts for the phenomena under consideration; and of these we are at liberty to take the one that seems the least improbable? I would not put it in this way. For I am convinced that the unconscious intelligence hypothesis is no explanation at all. It is not simply improbable; it is, just as it seemed to us at the beginning, a contradiction in terms. This is, I know, a mere assertion, and over against it may be put the assertions of those to whom unconscious intelligence is a positive reality. Is there anything more to be said? There certainly is, for we have the privilege of cross-questioning. The advocates of this hypothesis have made various applications of it, and told us many things about it. And I propose to the reader an examination of this testimony, feeling pretty sure that it will aid us materially in making up our minds whether unconscious intelligence is a reality, or a mere juggle of words by means of which those who use them unconsciously deceive themselves.

There have been two quite distinct applications of

this philosophy. On the one hand is that hypothesis which locates the intelligence in the creature; and on the other, that which postulates an all-comprehensive existence, or being, who, though unconscious, is unlimited in wisdom and creative power.

A prominent advocate of the former is Mr. J. J. Murphy. Let us see what kind of an intelligence it is that he believes animals very low in the scale to be possessed of. It is an intelligence which is in one sense theirs, but in another sense not theirs, for they know nothing about it. It works quite independently of their understanding and volition. They have no more part in it than we have in the determination of our stature or the color of our hair. "The unconscious intelligence that guides the bee in building its cell is the same in kind with the unconscious intelligence that determines the formation of its mouth and its eyes." [1] But how is this kind of intelligence related to that which usually bears the name? We are simply told that it is the very same. "The intelligence that forms the lenses of the eye is the same as that which in the mind of man has discovered the theory of the lens. The intelligence that hollows out the bones and wing-feathers of the bird in order to combine lightness with strength, and places the feathery fringes where they are needed for the purposes of flight, is the same which in the mind of the engineer has devised the construction of iron pillars hollowed out like those bones and feathers." [2]

We can readily assimilate the idea that the intelli-

[1] *Habit and Intelligence*, p. 405. [2] *Ibid.*, p. 411.

gence is the same; but we should be glad to know on what ground it is affirmed that it is ever unconscious. Our observation of animals tells us that their intelligence is far more limited — less discursive, to use Mr. Lewes's phrase — than that of man. But we certainly have every reason to believe that they are conscious, and intensely conscious within a certain range. Why, then, if the intelligence that guides the bee in building its cell is the same as that which guides man, should we say that in the case of the bee it is unconscious? Mr. Murphy says: "These insects, in building their hexagonal cells, are manifestly guided by intelligence of some kind; but it is *not* conscious intelligence, for we cannot think that they have any conscious knowledge of those properties of the hexagon which make that form most suitable to their purposes." Again, we ask, why not? If they have *knowledge*, why not conscious knowledge?

The only reason for denying consciousness seems to me to be that thereby the imagination is helped over a great difficulty. But what is the nature of the relief thus obtained? It is simply that which results from skillfully combining in a phrase the affirmation and denial of a given proposition. All the intelligence that is in this case predicated of the bee is denied in the qualifying word *unconscious*. By using two words for the idea under consideration, the true nature of the combination is obscured. But all that the judgment really assents to is that the creatures in question are possessed of an unintelligent kind of intelligence.

But, it may be responded, if this is the true diagnosis of the case, — if there is nothing more in the phrase *unconscious intelligence* than a contradiction of terms, — might we not reasonably expect that to some other philosopher it would seem better to use the words of our phrase in the reverse order, — to ascribe, that is, the origin of instincts and organs to unintelligent consciousness? This is certainly a reasonable suggestion. Such a philosopher we might *expect* to find, and such an one we actually do find.

The necessity of resorting to some non-mechanical principle to account for the adaptations that appear in nature is thus expressed by Dr. E. D. Cope: "It is evident that growth force is not concentric nor polar in its activity as are the physical forces, and that its determinations are antagonistic to these. Its existence in the earth has been a succession of conquests over polar force."[1] And, again: "The variations from which natural selection has derived the persistent types of life have not been general or very extensive. They have been in a limited number of directions, and the most of these have been toward the increase in perfection of some machine. They bear the impress of the presence of an adequate originating cause directed to a special end."[2] This cause can be no other than mind. "We are," he says, "led to the conclusion that evolution is an outgrowth of mind, and that mind is the parent of the forms of living nature."[3] But feeling it neces-

[1] *Origin of the Fittest*, p. 398. [2] *Ibid.*, p. 408.
[3] *Ibid.*, p. 230.

sary to reconcile this belief with "the evolutionary hypothesis that mind is the product and highest development of the universe of matter and force," he hastens to explain that, "by mind, as the author of the organic world, *I mean only the two elements, consciousness and memory.*"

Of these two elements, consciousness is always the responsible partner. Memory only registers the experiences that are supplied to it. Consciousness does all the rest. It feels the pressure of environment, it recognizes the want that bars the way to organic progress, and it invents the new adjustments that will meet this want. Consciousness is, in short, at all points, the great originator and organizer. It has operated from the very beginning of organic life. It is not simply a property of protoplasm; it is not, in the last analysis, a property of anything. It is not even a product. "The nature of consciousness is such as to distinguish it from all other thinkable things, and it must be ranged with matter and force as the third element of the universe." [1]

As thus described, consciousness is clearly synonymous with mind. Why, then, should we not call it mind and done with it? Simply because we cannot conjure with the word *mind* as we can with the word *consciousness*. Like the ogre of "Puss in Boots," consciousness can change itself into smallest of small entities, and quite disappear from our view. Thus Dr. Cope tells us that when he speaks of consciousness as modifying movement and movement as modifying structure, he uses the word "in

[1] *Origin of the Fittest*, p. 230.

its simplest sense as synonymous with physical sensibility. Its lowest and most usual exhibition is the sense of touch; the special senses, taste, sight, etc., are higher forms, while thoughts and desires are the organized products of the same raw material." [1]

But we cannot pass over the fact that some of the most important — we had almost said *intelligent* — adjustments of consciousness have to be made when it is at its lowest stage. Dr. Cope has fully illustrated, and as we believe, very justly emphasized, the principle that the origin of all new organs and forms is to be looked for in unspecialized material. That is, where consciousness is at its simplest, where it is just physical sensibility and nothing more, there it is found to be most actively and skillfully at work, taking its first and most difficult steps. In other words, we find *unintelligent consciousness* performing for Dr. Cope just the same wonders that *unconscious intelligence* performed for Mr. Murphy.

This same method — the method of separating mind into its conceptual elements, and using one or two of these as if they were the whole — has been adopted by some eminent writers of whom we should never have expected it.

Thus Haeckel, at the conclusion of an argument which he regards as a complete demonstration of the truth of the *mechanical* hypothesis, tells us that *memory* and the *power of perception* are the chief factors in the development of organisms. "Heredity," he says, "is the memory of plastidules

[1] *Origin of the Fittest*, p. 229.

(organic molecules), variability their power of perception. The one brings about the constancy, and the other the diversity of organic forms. In the very simple and persistent forms of life the plastidules have, so to speak, learned nothing and forgotten nothing. In highly perfected and variable organisms the plastidules have both learned and forgotten much." [1] It is clear that perception, in this scheme, accomplishes just as much as intelligence does in any other part of the universe. But it is somehow much easier to believe that organic molecules are endowed with unconscious perception and unconscious memory than to believe them possessed of conscious mind.

It may seem to the reader that we have dwelt quite long enough on this aspect of the subject. But we must entreat his patience. The idea of unconscious creation has been exploited in many ways; and we have not yet considered that development of it that has made the greatest mark and secured the largest number of adherents.

Edward von Hartmann's philosophy differs radically from the above schemes, in that it postulates an unconscious intelligence that is *all-pervasive.* It is essentially pantheistic. He himself has said that it is "the elevation of Hegel's unconscious philosophy of the unconscious into a conscious one." In it all the phenomena that we have been considering are referred, not to the unconscious intelligence of animals or molecules, but to the unlimited *clairvoyance* of an all-comprehensive existence, — "The All-One."

[1] Quoted by W. K. Brooks, *Heredity*, p. 37.

The unerring skill of the All-One has elaborated the adapted forms of the natural world in absolute unconsciousness, with the exception of that limited and very imperfect consciousness that appears in men and animals. It is to this system of philosophy that I referred when, at the beginning of the chapter, I ventured the opinion that the idea of unconscious creation had contributed in no small degree to the building up of a speculative theism. And I will say further, that it seems to me impossible for any reader of Hartmann's persuasive pages to doubt that he has grasped a unifying principle, which he has elucidated with much force and ingenuity; though it is not at all so certain that this principle is the one which he emphasizes. He has *called* his scheme The Philosophy of the Unconscious. But, in what follows, I shall try to show that its whole strength is owing to the fact that it is the *Philosophy of the Intelligent.*

From beginning to end, it rests upon the following thesis: *An intelligence which is not the intelligence of the creature is everywhere at work in the world.*

The evidence adduced to establish this main proposition is drawn from almost every department of our experience. He finds it in human history, he finds it in the development of the individual, he finds it in all the phenomena of growth, and in the routine life of our unconsciously performed bodily functions. The reparative power of nature is clearly intelligent. When the mutilated polyp reproduces its tentacles; when the decapitated worm forms a new head; when

the hydra, cut into many pieces, develops a new whole from each fragment; and when the human organism makes all those complicated modifications of its functions which result in the healing of a wound, — it is the manifestation of an adaptive wisdom that is ready and active at innumerable points. It is a wisdom that reveals itself, first, as a "clairvoyance," a prevision of wants to be met; and, second, as an amazing ingenuity in the means selected to meet them.

To show how impossible it is to avoid the conclusion that instincts are the expression of intuitive knowledge, Hartmann refers to that class in which the working out of a most elaborate plan, through instinctive action, is shared by a number of individuals, each one of whom contributes a different kind of work. Thus, when bees build a new comb, one kind of operation succeeds another with a regularity and fidelity to plan that would do credit to the most disciplined and foreseeing man. Workers, having different duties to discharge, succeed each other, or work on opposite sides of the cells performing parts which are complemental to each other. Each individual knows when to participate and just what to do; and the value of the work is conditioned upon the consentaneous coöperation of all engaged in it. As Hartmann remarks: "It is as if an invisible supreme architect had laid before the assembly the plan of the whole, and impressed it upon each individual,— as if every kind of laborer had learnt his destined work, place, and order of affording relief, and was informed by some signal of the moment when his turn came."

As equally convincing of clairvoyance and skill, he instances the purposive transformations that succeed each other when the embryo passes from its unicellular form by innumerable stages into the complex organism of a higher animal. Each stage is in this case the preparation for and necessary condition of all the stages that are to come after it; and each organ is developed earlier in the fœtal life than it enters into use.

All these phenomena, he argues, point not to different intelligences, but to one and the same intelligence working under different conditions. The marvels of creative activity in the fœtus, the adaptive energy that appears in the recuperative power of nature, and the mysterious intelligence that guides the creature in its relations to its external environment, are all related to each other. There may, indeed, be a diversity of consciousness. That is, there may be in each creature, in each ganglion and in each cell, a specific consciousness corresponding to its specific functions. Instinct, as the willing of means, may be the conscious act of the organism as a whole, or the act of a lower nerve centre, or even of a cell. But these all point more or less directly to a supreme wisdom that has an absolute knowledge of means and ends, — a wisdom that "never errs" and "never hesitates," that "never falls ill," and is "never weary."

Up to this point, it will certainly not be difficult for any theist to agree with Hartmann. But now we have to inquire why he finds it necessary to affirm that the author of all these wonderful adaptations is unconscious.

His reason is twofold. In the first place, from a physical point of view, there is no evidence — no analogical probability — of consciousness in the All-One; and, in the second place, from a metaphysical point of view, it is inconceivable. Consciousness is dependent upon organization. The self-conscious mind of man is a *product* that has been slowly reached through a gradual development from the simplest forms of protoplasm. What vague beginnings of consciousness may exist in the polyp, or the amœba, or the plant, we know not. But we know that this quality of mind becomes a more and more certain and conspicuous concomitant of living beings as their organization becomes more complex. And if, inverting the process, we descend the scale from one grade to another, the evidence of consciousness gradually fades till we finally reach the unconscious. "With the complete abolition of the cerebral function," Hartmann says, "the activity of consciousness is likewise abolished."

This is not the first time we have met this argument in the course of our discussion. But in the former case it was made use of by Mr. Lewes to prove the impossibility of an *anima mundi*. It is certainly clear that if it is fatal to the existence of consciousness beyond the limits of protoplasm, it is equally fatal to the existence of intelligence under the same circumstances. Our reasons for thinking it fatal to neither have been given elsewhere.

At one point in his argument, Hartmann seems to be aware that his position with regard to this matter is not quite satisfactory. He says this question may

very properly be asked: "Admitting that the actions of the All-One displayed in the individual are unconscious, so far as the individual is concerned, what is the proof that they are not conscious in the All-One itself?"[1] But all we get for an answer is this: the *onus probandi* of this proposition rests on the maker of it. "It is not," he says, "for me to prove that the unconscious physical functions may not on the other side be conscious in the All-One; but those who desire to make this addition to the hypothesis have to produce the proof of their assumption, which until then must be regarded as pure assertion, and accordingly to be scientifically ignored."

Well, then, if we must defend our belief in consciousness, let us find out from Hartmann how to do it. Let us see how he establishes that part of his philosophy with which we agree. How does he prove that intelligence and will may be predicated of the All-One? If he succeeds in rescuing the ascription of these attributes from the category of mere assertion, there is hope for us.

That intelligent guidance is the true explanation of the organic adaptations of nature commends itself to his mind, first, because there is no other way of explaining the existence of a progressive employment of means to anticipated ends; and, second, because the human mind instinctively jumps to this analogy, which in its concrete form is at once intelligible and satisfactory. This part of his argument

[1] *Philosophy of the Unconscious*, by Edward von Hartmann; translated by William Chatterton Coupland, M. A. B. Sc., vol. ii. p. 245.

takes exactly the same form as that of the theist. At all times and among all peoples, he urges, the wisdom of the Creator, World-orderer, or World-governor has been the theme of admiration and of praise, and the greater part of this expression has been the announcement of a genuine conviction, — a conviction that thrusts itself already on the mind of the child as soon as it begins to comprehend the remarkable combination of means and ends in nature. He only who denies natural ends can close his mind against this conviction ; and such denial is reached only by the substitution of abstractions for realities.[1]

Now, is it not true that the unsophisticated mind assumes the existence of consciousness in the Supreme Being as naturally as it does the existence of intelligence ? and does it not cling as tenaciously to the one idea as to the other ? The denial of the former is just as much the result of substituting abstractions for realities as is the denial of the latter. Hartmann himself tells us that the idea of unconscious intelligence never occurred to the primitive understanding, — that even to this day " most educated people hold it to be absurd to speak of unconscious thinking." [2]

In another connection he tells us that the starting-point of his philosophizing is anthropological. In fact, he represents this as the only possible starting-point. " Only what we are able to understand by analogy with ourselves, only that are we able to un-

[1] *Philosophy of the Unconscious*, vol. ii. p. 356.

[2] *Ibid.*, vol. i. p. 16.

derstand of the world at large." [1] If there were, he argues, a total want of resemblance between us and the rest of the world, all possibility of an understanding of the same would be cut off from us. But on the strength of the fact that we are "*ourselves a piece of the world*," and that our anthropological functions, like all other phenomena, have grown out of the fundamental principles of the world, "we may confidently indulge in a cautious use of this analogy."

We might suppose that this method would lead to the inclusion of consciousness as an attribute of the Supreme Being. But our author tells us that the guidance of this analogy is reliable only when we proceed critically enough in the separation of those peculiarities which distinguish us men from the rest of nature. He proceeds critically and strips off consciousness. Schopenhauer proceeds critically and strips off everything except will. Dr. Cope, with a like eclecticism, leaves us nothing except consciousness and memory. Such a result is unsatisfactory; and the only way out of it seems to me to be indicated by a saying already quoted in these pages, to the effect that *all philosophies are true in so far as they affirm, and false in so far as they deny.* If we should reverse this proposition there would be nothing left of the anthropological argument. But holding to it we get the whole benefit of the analogy.

It is as clear to Hartmann as it is to us that any *stripping off*, except his own, weakens if it does not

[1] *Philosophy of the Unconscious*, vol. iii. p. 144.

invalidate the argument upon which he in the last resort bases everything. He points out to us the inconsistency of Schopenhauer because he discriminates between will and the rest of the mental faculties. It is altogether inconsequent and one-sided in him to hypostatize will as individual metaphysical essence while referring the stores of memory, together with the intellectual foundations, talents, and aptitudes, to the physical constitution of the brain. "It is obvious," he remarks, "that the absolutely irrational (will without intelligence) taken as a principle must be very much poorer, much less fertile, than the absolutely rational, the idea and thought."[1] There can be no question about this. But is it not equally clear that if will, idea, and consciousness are all retained in our conception of the power that works for ends in nature, we have a principle that is not only more fertile than Hartmann's, but one that is beyond comparison more comprehensible?

How shall we explain such an exceedingly one-sided application of a great principle on the part of an author who for the most part reasons so well? The mystery is solved, at least in part, when we discover that he everywhere uses the word *unconscious* in a very peculiar sense. This appears clearly when he institutes a comparison between theism and his conception of the All-One. The advocates of theism, he seems to say, have no real ground of controversy with him, because the unconsciousness of his clairvoyant intelligence is not a pure negation, but, on the contrary, an unknown and unknowable affirmative.

[1] *Philosophy of the Unconscious*, vol. iii. p. 150.

"We are compelled," he says, "to designate this intelligence, which is superior to all consciousness, at once *unconscious* and *superconscious*." [1] This, he protests, does away with all reasonable complaint against his philosophy on the part of theists. For, to use his own words, "*if* the All-One, with all its unconsciousness, possesses a *super*conscious intelligence, all-knowing and all-wise, which teleologically determines the content of creation and of the world process, we stand here neither as accidental product of the forces of nature, nor is God dwarfed by denying Him *this* mode of consciousness." [2] Is, then, the word "unconscious," as applied by Hartmann to the All-One, only intended to emphasize the difference that must be supposed to exist between the finite, limited consciousness of man, and the unlimited, all-embracing consciousness of the Supreme Being?

There would seem to be no doubt of this when we read the following: "If one still, for one moment, tried to imagine the impossible demand satisfied that consciousness should be preserved as a form of representation, yet this form also would have to be taken as *infinitely elevated above the consciousness known to us*. And it would then be at once apparent that the infinite form is equivalent to pure formlessness, — that the absolute consciousness demanded for God must again prove to be identical with the absolutely unconscious." To do Hartmann justice, it should be said that he advertises the reader of this peculiarity of his language at an early stage of his

[1] *Philosophy of the Unconscious*, vol. ii. p. 249.
[2] *Ibid.*, vol. ii. p. 247.

argument. When treating (vol. i. p. 68) of those nerve centres in man which seem to be the source of complicated automatic action, he says: "The cerebral is by no means the sole, but merely the *highest*, consciousness of the animal, — the only one which in higher animals attains to self-consciousness, therefore the only one which I call *my* consciousness. That, however, the subordinate nerve centres must also have a consciousness, if of a vaguer description, plainly follows from the continuity of the animal series, and a comparison of the ganglionic consciousness of the invertebrata with that of the independent ganglia and central parts of the spinal cord of the higher animals." But immediately we are warned that this ascription of consciousness to subordinate nerve centres is only "provisional," because, "compared with the cerebral consciousness which a man exclusively recognizes as *his* consciousness, it is certainly unconscious, and it is accordingly shown that there exists in us an unconscious will, since these nerve centres are all contained in our corporeal organism, therefore in us."

It is not, then, with the intention of deceiving *us*, that Hartmann so persistently uses a negative word to express that which really stands in his imagination for a positive entity. It is that he deceives *himself* with the conceit that this negative is the determining principle of his philosophy. To accommodate his own phrase with regard to Hegel, we may say that his system is *an unconscious philosophy of the conscious*. I have dwelt upon it because it is an argument that approaches the great problem from

the side of natural phenomena, because it proceeds inductively from the facts of nature, and is pushed along natural lines with great persuasiveness and wealth of illustration, and because it seems to me to outline clearly the general characteristics of a conception of God's relation to his world to which we are forced by the knowledge of a creative process.

We are not taking an unfair advantage when we substitute the author's own phrase *superconscious* for "unconscious" whenever the latter is used with reference to the All-One. For although he admits it with a protest and declares it to be only provisional, it is, in fact, of a superconscious intelligence that he invariably discourses when he specifies the characteristics of the Supreme Being. The All-One, he tells us, "*employs expedients;*"[1] He "*avoids* difficulties,"[2] He "*prefers*"[3] one method to another, He "*intends*," etc. And the fact that we are carried by the argument to a conclusion not contemplated or intended by the author, but the reverse of that which he set out to prove, does not detract from, but greatly enhances, its logical value. It is one more illustration of the impossibility of explaining the world by abstractions. It is a notable witness to the necessity of using an unmutilated anthropomorphism if we avail ourselves in any degree of the human microcosm as a symbol of the greater world.

[1] *Philosophy of the Unconscious*, vol. ii. p. 308.
[2] *Ibid.*, vol. ii. p. 303. [3] *Ibid.*, vol. iii. p. 311.

CHAPTER XIII.

OPTIMISM.

We have reached the conclusion that there is a Supreme Being, and that he is the intelligent originator and director of the world process. I have ventured to say *we*, for it becomes necessary now to assume that the reader stands with the author on this fundamental postulate of theism. But we have not even time to take breath on this eminence that from afar looked like a resting-place.

It is not that the result reached contains less than we had imagined, but that it contains so much more. It opens before us, not only the possibilities that were the incentive of our effort, but other possibilities to which, in the ardor of pursuit, we had hardly given a thought. In other words, there is no lack of evidence in nature of purposive intelligence, but there is so much of it as to be embarrassing. No sooner do we turn from the contemplation of the idea of design, in the abstract, to the examination of its concrete instances, than our hypothesis of *one* planning intelligence is well-nigh swamped. From every side there pours in such a multitude of special adaptations to special ends that we are sorely puzzled to discern anything like unity of purpose in them. What we seem to see is a great conflict of innumerable intelligences and wills.

So long as we confined our attention to a general survey of nature we were not impressed by this aspect of it. There was no lack of prosperity and joyousness in our picture of the world; and our prepossessions with regard to the goodness of the Creator helped us to see in these the abundant evidence of his benevolence.

But we cannot go into particulars without seeing things in a very different light. The arrangement of it all is so different from what we should have expected it to be. Instead of peace and harmony, we find that the adjustment of species to species is such as not only to admit of, but actually to necessitate, continual warfare and destruction. All the world over, life is perpetuated by the extinction of life. There cannot be gain in this quarter without loss in some other. The improvement of structure that enables one species to cope more successfully with environment makes it harder for other species to subsist at all. Increase of the means of defense or powers of escape granted to this order augments the difficulty of procuring food on the part of that other order. Additional facilities for the capture of prey, while securing prosperity to creature number one, make the hazards of life greater for creature number two.

For the sake of clearness, let us take a concrete example, — one little episode from the great drama that is being constantly enacted around us. I am indebted for it to a paper on "The Growth of Jelly-Fishes," by Professor W. K. Brooks.[1]

[1] *Popular Science Monthly*, September, 1888.

On any land-locked and sheltered sea-beach, where the waves ripple up on to the sand without breaking, hundreds of small spiral sea-shells may usually be found in the shallows dancing up and down the sand at the waters' edge, following the crest of each little wave as it flows up and spreads out over the beach, and turning to run back with it as it falls; keeping always just within the water, and exhibiting restless activity and agility, quite unlike the sluggish habit of the snails which normally inhabit the shells. If the loiterer by the waves should be inquisitive enough to be attracted by them, and should search for the meaning of the unusual liveliness of the snails, he would find that each shell is inhabited by a hermit-crab, that, after devouring the true owner of the house, has thrust his own body into it, and carries it about, as a defense against his many enemies, among whom his most pugnacious and cannibal brothers and sisters are perhaps the worst.

The shell of the snail was, we must say, intended in the first place to be beneficial to the snail itself; and admirably adapted it was to secure the tranquil happiness of its inmate. But on the other hand, this arrangement, so advantageous for the snail, made it more difficult for a certain active, hard-working family of crustacea to obtain their food. But adaptations for the overcoming of difficulties are not wanting to them; murderous instruments have been bestowed upon the crab, and these enable it to break through the inherited rights of the snail, and having put an end to its existence, to apply the shell to an entirely different use from that originally intended. Now as to design,—does not the triumph of the crab seem the direct defeat of the provision

so elaborately and skillfully made for the well-being of the snail?

But this is not the end of the history. We cannot suspect, from what we know of his nature, that the crab has any benevolent ulterior intentions. But his crime incidentally secures the welfare of an exceedingly interesting colony of microscopic creatures that would otherwise find life exceedingly difficult.

The progenitor of this colony is a minute and very helpless animal of simple structure, called a *planula*. It has been hatched from the egg of a jelly-fish; but it is very far from being a jelly-fish itself. In fact it can never survive to be anything, unless it is so fortunate as to come upon a most exceptional combination of circumstances. Its destiny, if it is fortunate, is to develop into a whole community of beings, having different forms and functions, so united in a single organism that the offices performed by each member of the community benefit all the rest. Only when all the stages of this development have been passed through does it send forth a young independent jelly-fish like the one which produced the planula.

As we have already observed, the consummation of this cycle depends upon a combination of circumstances that is not easily found. Unless the planula very soon after birth comes in contact with some solid body upon the bed of the ocean to which it can cement itself, it dies. If it attaches itself to an unsuitable substance, its death is equally certain. Planulas that adhere to living mollusks or to empty shells have no chance of survival, for in either case

they are subjected to fatally rough usage. But the care which a hermit crab takes of himself is just the care that the little colony requires.

As the gentle waves ebb and flow on the shore, he follows them back and forth, keeping close to the edge, where the food that is washed out of the sand is most abundant, and the aeration of the water most perfect. As long as the sea is calm, he may be trusted to carry his load of hydroids into the places which are most favorable for them, and as soon as a storm approaches he trots off with his charge to a safe shelter in deeper water and waits until it has passed.

Now, what shall we say of this chain of connected events as regards design? Were all these situations designed? or were none of them designed? or were some designed, and some the result of chance? I am sure the latter hypothesis represents the judgment that would ordinarily be passed upon them. From the standpoint of each individual career, the organic adaptations that are calculated to insure success in the struggle for existence seem to have been invented by some very skillful mind for the accomplishment of this special end. But on the other hand, the external conditions that make or mar the career of each seem to be fortuitous. In the hydroid colony, the diversity of organization and the complicated division of labor specially impress us with the necessity of postulating a planning intelligence; but its perfectly adapted *habitat* on the stolen shell of a rapacious crab seems to be the result of chance.

In short, we can discern no unity of design, but

rather a conflict of designs suggesting a plurality of designers. It is as if each species had attached to its special interests a skilled but limited inventor, who in each case adapted himself to circumstances as well as he could. But how shall we think of all these conflicting and mutually destructive designers as related to a supreme, overruling intelligence?

It has seemed to some that if, notwithstanding these antagonisms, we persist in assuming an intelligent Creator, we are forced to think of him as one who amuses himself, one who delights in the spectacle of an infinitely varied conflict, — a conflict which tests and develops all the skill and energies of his curiously fashioned gladiators. Does not the care that protects and continues all these conflicting orders resemble the care that such a being would take to insure the vigor of the instruments of his pleasure? And, further, does not the progressive aspect of creation suggest just that craving for variety and novelty in entertainment which would characterize such a mind? Does not the history of mankind, ever fighting and destroying one another for ideals that are never realized, frenzied by enthusiasms that are anon seen to be the outcome of illusions, harmonize altogether with such a conception?

With our attention shut up to the one class of phenomena under consideration, it is impossible to deny that this view of things is legitimately derived by reasoning analogically from well-attested facts. The imaginations of our Teutonic and Scandinavian ancestors were so impressed by these facts that they

constructed for themselves a religion of which warfare was the central idea. Odin, the creator and sustainer of every kind of life, the being who pervades the universe, working in and through all animate and inanimate things, is above all else the god of battle.

He is a god who loves virtue and hates iniquity. But the virtue that outranks all others is bravery. His elect are those who win glory in battle. With a special and favoring interest he watches over the birth of the hero, superintends his growth, and trains him in the use of arms. When he goes forth to combat, Odin is still with him inspiring him with valor; and when death at last overtakes him, fighting with his face to the foe, it is Odin who bears him away to the bright Valhalla, into the company of all the heroes. And this Valhalla is no haven of tranquillity. It is a great and glorious place of war. It boasts five hundred and forty gates, through each of which eight hundred men can go abreast. There the heroes of earthly wars live and surfeit themselves with fighting. They are sometimes killed in the fray; but they revive, and return to shout and drink mead with all the gods and heroes.

We have certainly strayed very far from this ideal of our ancestors. Odin is not the god whom we worship. We have not, indeed, ceased to admire bravery or, when our attention is turned to it, to recognize the disciplinary advantages of conflict. But a new vision of good has supplanted the old one. Our God is "the God of peace and love." His heroes are those who forgive their enemies, who

do good unto all men as they have opportunity, who live lives of gentleness and self-effacement. His kingdom is a kingdom of peace. The ideal society toward which he is leading his creatures is one from which violence and all forms of oppression have been forever banished by love and mutual helpfulness.

Now the question for our natural theology to answer is this, — Does the Scandinavian or the Christian ideal find the strongest indorsement in nature? We have already passed in review a class of facts that, taken by themselves, pronounce emphatically for the religion of our ancestors. Its God is a natural if somewhat redundant deduction from these facts. Is there any other class of experiences of equal significance upon which we can as legitimately base our belief in a benevolent and loving God, who hates violence, and desires the happiness of all his creatures?

It is perhaps unnecessary to say that no indorsement of our ideal is possible unless we repudiate the assumption, so often made, that the God of Christianity is to be thought of as a Being absolutely free from every kind of limitation. If we once admit that in order to be orthodox we must affirm that the Supreme Being could have attained all the ends of creation just as well without conflict, then we must admit further that the present order of things proves that He loves conflict and violence on its own account, and there is nothing more to be said. But if we are satisfied to cling to our analogy and to postulate a Being who, though infinitely

greater in all his attributes than man, is yet one who, like man, must use means for the attainment of his ends, there is much to be said in support of the Christian ideal as the true expression of what we find in nature.

It is not hard to understand why conflict should appear to all warlike nations the predominant characteristic of the world. Nor can we wonder that this arrangement excited in the worshipers of Odin no sentiment of abhorrence. All the virtues most highly prized by them were the outcome of war. Bravery, endurance, the overcoming of difficulties, the enthusiasm and elation that comes from the disregard of personal safety in the presence of danger, — all these qualities were the fruits of war. And what could be more natural than for them to worship a supreme being who took delight in the combat, and made provision for it his chief interest? Nor, on the other hand, is it difficult to account for the very different preëminence that the idea of conflict has assumed in modern thought.

In our estimate of the forces that control the world we are very much at the mercy of currents of emotion that by turns sweep over society. A century ago the whole tendency of thought as regards nature was optimistic. The wave of sentiment that, with the cry *Back to nature*, precipitated the events of the first French Revolution was not confined to a few philosophers. Not only in France, but throughout cultivated Europe there was a belief in the harmony of nature that amounted to hallucination. The results of the attempted return in

France did much to dispel this illusion, and the study of nature has done still more. The thinking world has opened its eyes to the fact that nature is throughout a scene of conflict, and that *human* nature makes for harmony only in so far as it cultivates assiduously one class of impulses, and represses or restrains another.

But when did the human imagination ever do things by halves? We find ourselves to-day in the midst of an extreme reaction. We have not simply ceased to think of nature as all-harmonious. We have almost forgotten that there is any harmony in it at all. Thanks to an explanation of the origin of forms that makes conflict the great artificer of the world, we have got back to the Scandinavian's conceptions of its preëminence without being able to share his admiration for it. Our theories of what *ought to be* in the best ordered world are almost the reverse of his; and we are tempted to blacken our souls with pessimism. But are we any less wild in our estimation of the realities of nature than were the followers of Rousseau? Are we any less morbid than they were giddy? I think not. I am confident of it, notwithstanding the prejudice that exists in favor of the more depressing view as *scientific*.

What we wish to find out is whether this view has been derived from the study of nature as a *whole*, or only from an absorbing study of one side of it. Let us first take a look at the animated world from the same external point of view that has furnished us with the hypothesis of natural selection.

Some very significant facts that seem almost to have escaped the observation of the magnifiers of that hypothesis have been recently set forth by a writer in the "Nineteenth Century," [1] from whom I will make a few quotations. "As soon," he says, "as we study animals, — not in laboratories and museums only, but in the forest and prairie, in the steppe and the mountains, — we at once perceive that though there is an immense amount of warfare and extermination going on amidst various species, and especially amidst various classes, of animals, there is, at the same time, as much or perhaps even more of mutual support, mutual aid, and mutual defense amidst animals belonging to the same species, or at least to the same society. Sociability is as much a law of nature as mutual struggle."

Speaking of his exploration of the Vitim regions in Siberia, in company with another eminent zoölogist, he says: "We were both under the fresh impression of the 'Origin of Species,' but we vainly looked for the keen competition between animals of the same species, which the reading of Darwin's work had prepared us to expect. We saw plenty of adaptations for struggling, very often in common, against the adverse circumstances of climate, or against various enemies, . . . but even in the Amur and Usuri regions, where animal life swarms in abundance, facts of real competition and struggle between higher animals of the same species came very seldom under our notice, though we eagerly searched for them."

[1] P. Kropotkin.

Speaking of ants, — "that immense division of the animal kingdom which embodies more than one thousand species, and is so numerous that the Brazilians pretend that Brazil belongs to the ants, not to men," — our author says: "The ant thrives without having any of the protective features which cannot be dispensed with by animals living an isolated life. Its color renders it conspicuous to its enemies, and the lofty nests of many species are easily seen in the meadows and forests. It is not protected by a hard carapace; and its stinging apparatus, however dangerous when hundreds of stings are plunged into the flesh of an animal, is not of great value for individual defense; while the eggs and larvæ of the ants are a dainty for a great number of the inhabitants of the forest."

On the strength of these considerations, taken in connection with what we know of the manner of life and of the success of this great family, he ventures to affirm that "if we knew no other facts from animal life than what we know about the ants and the termites, we already might safely conclude that mutual aid and individual initiative are two factors infinitely more important than mutual struggle in the evolution of the animal kingdom."

The same general conclusion was reached by Professor Kessler, the late dean of the St. Petersburg University. His expression of it was as follows: "I obviously do not deny the struggle for existence, but I maintain that the progressive development of the animal kingdom, and especially of mankind, is favored much more by mutual support than by

mutual struggle. . . . All organic beings have two essential needs, — that of nutrition and that of propagating the species. The former brings them to a struggle and to mutual extermination, while the needs of maintaining the species bring them to approach one another and to support one another. But I am inclined to think that in the evolution of the organic world — in the progressive modification of organic beings — mutual support among individuals plays a much more important part than their mutual struggle." [1]

Here, then, are two realities, two principles which work side by side, now antagonizing, now supplementing each other. Viewed in this way, simply as coexisting forces, they determine nothing with regard to the character of an assumed creator. The combination of animals for mutual support does not banish conflict; nor are the conditions of life so adjusted as to lead to the gradual extermination of those creatures that do not combine. The spiders, though addicted for the most part to solitary living, hold their own in every part of the world. The power that blesses mutual helpfulness and harmony blesses also the unsocial, isolated life that seeks its ends through cunning and violence.

But there is another way of estimating the significance of these two principles. Let us look for a moment at their history, — at the part that each has played in the great world process. [2]

[1] Quoted in the article above mentioned.

[2] For a brief consideration of the part that conflict plays in the world, see Appendix B.

If a study of their history shows that these two tendencies have always been as evenly balanced in the creation as they seem to be to-day, it might be difficult for us to say that one was superior to the other in the sense of being more the end of creation than the other. But if, on the contrary, we find that there has been a continual increase in one of them, — a continual triumphing of the one that in the beginning was nothing, or next to nothing, over the one that from the start was the sole expression of the relations of living beings to each other, then surely we shall have a good reason for affirming that the former represents one of the great ends toward which the process moves.

What we find at the beginning is *no* mutual support. We need not go back to atoms. It will illustrate the principle equally well to begin with unicellular organisms. These, the first animals, lived absolutely separate lives. There was unending reproduction by a division of the individual organism, and unending conflict. But, from this on, the history of creation is the record of successive combinations, each one of which has been a victory over the principle of conflict. We have seen how these simple primitive organisms are found first combining in homogeneous colonies, then in associations of two or three classes of members each of which has different functions, then in organisms more and more complex, till we reach those that are composed of millions of living creatures having the most diverse characteristics.

This class of facts, while it exhibits the principle

of combination as progressive, at the same time widens immensely our thought of its actual predominance in the world. After we leave the very simple organisms each separate individual that enters into conflict with others represents myriads of beings that are mutually supporting each other. And whenever we see one of these complex beings leading a more or less isolated life, we have to remember that the isolation is that of *one* contrasted with the combination of many. The solitary spider consciously plotting and ensnaring and killing, for the advantage of one, is, without knowing it, securing the advantage of a great multitude of diverse beings that are united in a perfect organization of mutual helpfulness.

But at this point, some one will be sure to question the use that we have made of the phenomena of physical organization. What, it will be asked, is there in common between the organically connected elements of one of the higher animals, and the social combinations that are consciously and voluntarily entered into by human beings who know the meaning of mutual aid and of personal sacrifice for the general good? When unicellular organisms give rise to multicellular, and these in turn to organisms that have many different kinds of cells and combinations of cells, there is indeed a resemblance to the intelligent combinations of men; but there is no moral quality involved. There is nothing to make us think that the cells feel anything like kindness or good will toward one another, or that they have any understanding of the nature of their mu-

tual helpfulness. What we see is simply the outcome of a natural process.

This is all very true; but it does not affect the point at issue. If the agents of these combinations are wholly ignorant of the purposes they serve, it becomes all the more necessary to trace them to the intelligent beneficence of a Creator who has reached this goal as the result of a long process, every step of which has been a victory of the principle of mutual support over the principle of conflict. Throughout this process, combination appears as the end to be attained. It is the positive, constructive principle, — the principle that makes for improvement, for advance in the scale of being. As an irresistible, always advancing power, it has crowded conflict to the outskirts. It has made ever-widening inclosures within which warfare is reduced to a minimum. A normal human body is, so far as the mutual relations of its many elements are concerned, an ideal world. It is a vast organism, each member of which, while living its own life, lives it in such manner as to minister helpfully to all the lives with which it is connected.

The step from this kind of combination to that which is the outcome of voluntary intelligent acts does indeed seem a long one. Yet the two are not so absolutely separated from each other as they at first appear to be. In a community of bees, for instance, the individuals are both organically and intelligently related to each other. The hive is the unit of bee life; but the separate individuals have a large amount of liberty, and the opportunity of ac-

quiring a considerable degree of personality. There are good bees and bad bees. There are those that labor honestly for the welfare of the community, and there are robber bees that abandon themselves to lives of depredation. The same is true of the communities of ants.

The family relation, the starting-point of the *social* organism, begins in an organic dependence of the sexes upon each other and of the offspring upon the parent; but this is superseded by a combination that is maintained by intelligence and affection. And this, again, by a succession of stages, gives rise to the nation. The community of feeling and interest that unites the family widens out into that of the clan, the tribe, the commonwealth. And as we reach this stage of development, there comes into view a clearly defined duality in the relations that make the individual a part of the community. Loyalty to all the members of the tribe centres in loyalty to its chief or individual head. Thus we are by a natural development carried from a world of separation and conflict into full view of the ideal that our religion places before us. The nation, however imperfect its development, is a symbol and at the same time a prophecy of the Kingdom of Heaven.

I say it is a *prophecy* because we have every reason to believe that the world process has not exhausted itself or reached its final goal. The very imperfection of the present order suggests further development. The social instinct, that in the emotions of sympathy, kindness, and love craves a more

perfect realization, shows that we are constitutionally fitted for it. The social ideal that has somehow established itself in our imaginations, and that has, in these later days, recognized its real symbol in the physical organism, is the pledge of it. And conscience, continually urging us to the attainment of that ideal, is an ever present indication that the Being who has worked hitherto for the perfection of organic harmony still works through the spirit of man for the production of a coming reality, — a reality of inexpressibly greater worth than all that has gone before.

In *conscience* I find the analogue of instinct, but also something vastly higher. Like instinct it bears the impress of an intelligence that is not our intelligence, of a will that is not our will. It has the same quality of insistence combined with mystery. Like instinct it brings "the blind by a way that they knew not." As the instinct of the embryo impells it through successive changes to the realization of certain definite organic forms, so the moral imperative urges the individual and the race to the progressive achievement of an ideal society. At the same time, conscience is in some respects the antithesis of instinct in its lower ranges. It could not be otherwise when the one is addressed to the perfection of a moral order, while the other is intended to secure only the harmony of physical relations.

In the former, the moulding influence appears as a persuasive commanding message addressed to beings who may refuse to obey it. In the latter, it is

an overruling providence that accomplishes its designs without asking the coöperation or consent of the creature. But between these two extremes — the working that makes for purely physical organization on the one hand, and that which makes for the purely moral on the other — we have many gradations of instinct in which the coöperation of the creature appears in varying degrees.[1]

But I must not forget that there is a school of writers who affirm that all the phenomena of conscience can be accounted for without any reference to a superhuman agency. Conscience, it is said, has been gradually evolved from experiences of pain and pleasure. It is a name that we have given to the emotions that certain social requirements excite in us. All that I have to say to this is, that I have never yet seen such an explanation that did not depend for its satisfaction upon the suppression of all the most essential characteristics of conscience. From the desire of avoiding pain or of securing pleasure, it is impossible to evolve anything approaching a moral motive. Vary the pleasure or pain as we will, the *motive* is always the same, — the desire of securing pleasure or of avoiding pain; we have not so much as touched the idea of conscience.

When I turn from such explanations to the conscience of real life I experience something the same feeling that I do when I go from the arguments that prove human beings to be mere automata to the contemplation of an actual living man. The contrast of the real thing to the explained thing is no

[1] See Appendix A, "The Evolution of Conscience."

greater in the one case than in the other. For the truth in either case I find no help in analysis. The concrete experimental fact, as conceived by men in all ages, is the one and only reality. I do not mean that men have always recognized in conscience the will of a personal God, but that they have with very few exceptions never failed to regard it as a thing of superhuman origin.

He who traces morality in the nature of things may not be a theist, but he is in harmony with theism, for the nature of things is God manifesting himself in creation. He who tells us of a stream of tendency, or of the " Eternal not ourselves that makes for righteousness," affirms the most important part of our creed. And his testimony, if he be a man profoundly versed in the history and literature of the world, is valuable, even though it be linked with a denial of the existence of a personal God. We can leave the denial to take care of itself; for the affirmative part of such a creed is the destruction of its negative part. And testimony from such a source as to the reality of an *extra*-human power that is leading society in the direction of its highest ideals, has a peculiar value because it is beyond the suspicion of an antecedent theistic bias. It appeals to us as a disinterested, wholly independent judgment reached by the study of nature and of history.

Let us listen for a moment to Dr. Maudsley. He has studied the subject from a scientific, as Mr. Matthew Arnold has from a literary and historical, point of view. Familiarity with the mechanical aspect of things has banished from his mind all

thought of a Supreme Being; but it has not in the least obscured his belief in a power that works in nature and in man for the attainment of moral ideals. In the ideals themselves, as well as in "the categorical imperative of the moral sense" that urges to their realization, he recognizes the working of a formative power that has been in operation from the very beginning. "We are sure and can affirm," he says, "that a fundamental impulse of evolution is felt in the higher functions of mind," [1] — an impulse "that cometh from afar, was before man was, works in his progress, prophesies in his instincts and aspirations, inspires his faiths, is interpreted lamely in his creeds, and its end is not yet." [2]

Now if this view of the origin of the moral sense and of our religious ideals is the true one, — and it certainly expresses the collective experience of all the ages, — we are fully justified in retaining and emphasizing the fundamental postulate of our religion. The Lord our God is not only a great God, He is beyond all peradventure a *good* God. As judged by his works, He desires and labors for that which men call goodness. The ideals that man is striving to realize are *his* ideals; and the efforts that we make in the direction of goodness are not altogether ours, they are God working in us, for the bringing about of the great end toward which the process of creation has been moving from the beginning even until now.

We are ready then for the next question, — one that always follows hard upon the conclusion to

[1] *Body and Will*, p. 205. [2] *Ibid.*, p. 187.

which we have been brought: Granted that the Author of the world is and always has been actuated by a benevolent desire for the happiness of his creatures, is there any evidence that the means chosen have not proved a failure? Why is the consummation of the plan so long postponed? Why is there so much in the world that successfully works against it? Has something gone wrong? Have actors been called into being that have unexpectedly proved unmanageable? Has the process got beyond the control of the benevolence that conceived it and set it in motion?

Judged from the standpoint of human experience, this seems at first sight a reasonable hypothesis. There is without question much in the world that *ought not* to be. There is much that *ought* to be that is not yet. There is much that seems to make persistently for the frustration of that which is good, and for the indefinitely prolonged triumph of that which is evil. But there is another way of looking at it. It may be that all the evil, all the suffering, all the defeats of the power that makes for righteousness were foreseen from the beginning; and that nevertheless the process as a whole was ordained. We cannot judge of a process till we know fully what is to be gained by it. War is a great evil; but war is at times better than peace because of a better condition of things to which it leads.

Both of these conceptions have found a place in our inherited theology. I do not mean that both views have been formally stated. The absolute foreknowledge of God has been uniformly insisted

upon as a necessary article of belief. But having been duly honored, it has been allowed to drop almost completely out of sight; or we might say, it has appeared only as the faint and inharmonious background of the picture that we have formed of the history of the divine government.

In view of this fundamental doctrine, it has been impossible to affirm, in so many words, that anything unexpected has taken place; and yet the fall of man has always been presented to our imaginations as a catastrophe, as an event that was not expected by the Creator. He had another and far better career planned for the human race than the one upon which it willfully entered. In other words, his plan was thwarted, and the counter-plan of redemption was brought in for the rescue of some from the wreck.

Dr. Newman, after passing in review the evidences of the moral disorder of the world, asks: "What shall be said to this heart-piercing, reason-bewildering fact? I can only answer that either there is no Creator, or this living society of men is, in a true sense, discarded from his presence. Did I see a boy of good make and mind, with the tokens on him of a refined nature, cast upon the world without provision, unable to say from whence he came, his birthplace or his family connections, I should conclude that there was some mystery connected with his history and that he was one of whom, from one cause or another, his parents were ashamed. Thus only should I be able to account for the contrast between the promise and the condition of his being.

If there be a God, — since there is a God, — the human race is implicated in some terrible aboriginal calamity. It is out of joint with the purposes of its Creator." [1] In harmony with this view, the planting of an infallible church is regarded by him as an interference. It is an extraordinary interposition for the defeat of an element that has got beyond the control of the ordinary means of restraint.

As I have already intimated, this does not seem to me to be the necessary or the true history of the moral disorder of the world. It is the traditional view, handed down to us from an age when men held very much narrower conceptions of the world process than they do to-day. But, to my thinking, it harmonizes with the Scriptural account of man no better than it does with the natural history account of him; and in what follows I shall try to show that there is an ever increasing volume of evidence in support of the view that there has been no break in the plan of the Creator, and no change of policy.

[1] *Apologia pro Vita Sua*, chap. v.

CHAPTER XIV.

THE NATURALNESS OF REVELATION.

No law of nature has been discovered except through the patient examination of many facts; nor can any law that is not built upon facts stand. On the other hand, it is an unquestionable truth that our knowledge of facts is, to a great extent, the outcome of the discovery of natural laws. When once, in any department of science, a working hypothesis has been reached, its obligation to facts is amply repaid by the reflex light which it throws upon them. From the standpoint of the newly discovered principle we may often be said to rediscover the very facts that have conducted us to it. The proportions of whole groups of phenomena, and even of subordinate principles, become essentially modified when they have found a place under a more comprehensive law which discloses their relations to other groups and principles.

Evolution, as a universal method, aspires to the very first place in the hierarchy of law. It is, in fact, a tentative statement of that unity of principle which has long been held, by a scientific faith, to underlie all nature. If its claims are made good, therefore, it will leave nothing unmodified. The connection of great departments of thought hitherto isolated will

be progressively apprehended. Forces that have appeared to be antagonistic will be seen as complementary. Ideas that have had their rise in limitation of view will be dissipated, and the element of truth which they contained will be incorporated in some larger thought. One conspicuous result of the application of such a principle must be to bring into greater prominence those features of phenomena and of departments of thought that mark their kinship to the rest of our knowledge, and to sink proportionately those features by which they are differentiated and held apart. The more completely isolated, therefore, any section of our thought, the more will a rearrangement of it be necessary.

Now the Christian revelation has, in the traditional conception, occupied a place so completely outside that order of the world which we ordinarily call *natural* as to seem almost the antithesis of it. The ideas of interference, reversal, overruling, have been made so prominent that the change required for its adoption into the scheme of nature must, at first sight, appear revolutionary. And, so far as *form* is concerned, it is revolutionary. But in this it does not stand alone. The idea of revelation, as a series of isolated facts, was not itself an isolation. It was part of a larger conception which separated the sum of phenomena into two distinct classes: the natural and the supernatural, the orderly and the anomalous.

Creation as well as revelation belonged to the latter class. At the beginning of the world there was a brief period which was in every way distinct from the ages that came after it. This brief period was

the term of origins. As yet there was no course of nature, but the preparation for it was actively carried on during six days. The various organs of nature having been successively called into a fully developed existence, the work of creation ceased, and a uniform course of nature supervened. In this regulated course of things God acted mediately and at a distance. He was, as it were, outside an order which he had established, and which moved on with the routine regularity of a machine. But at certain times, and for definite purposes, the Creator broke into this order and declared his sovereignty by special and startling manifestations of power.

So long as this conception of the world was undisturbed, the prominence given to the idea of interference in connection with the Christian revelation could not be diminished. Ignorance of natural laws inclined men to see supernatural interference in every exceptional phenomenon. The plague, the earthquake, the lightning, the storm, the eclipse, were not the outcome of the order of nature. They were the interruptions of that order. But, as science advanced, this picture was gradually transformed. One after another the extraordinary phenomena of the world were assigned their places in that order which they had been supposed to transcend. The realm of the supernatural suffered constant and damaging invasion, and the traditional views of creation and revelation were left in conspicuous loneliness. The conviction that the order and uniformity of nature is an *all-embracing* principle grew with every new discovery and with every success in classifica-

tion; and, proportionately, the presumption against any exception to this regularity of natural cause and effect gained strength.

But again there came a change. A new light broke upon the scientific world, which shook the conception of the uniformity of nature as severely as it had shaken the idea of disorderly interference. The hard-and-fast line which separated the epoch of beginnings from the epoch of a settled and uniform course of nature was proclaimed to be imaginary. That little and mysterious compartment of time, solid with miracles, was made to pour all its wealth of efficiency, of wonders, of new departures and startling creations, into that very order of nature which science had so carefully guarded. Six days are insignificant when compared with ages upon ages that no man can number; but a little leaven leaveneth the whole lump. In this particular six days there was a pent-up wealth of transforming power not dreamed of by those who set free their contents: a power only beginning as yet to make itself felt in the rearrangement and transformation of our ideas.

But we can see what some of the main tendencies of it must be. In the first place it will depose two old usurpers in the realm of thought, without much regard to the divine right of phrases. "*Settled order of nature*," "*Supernatural interference*," must together take their places among the great ones that have ceased to disturb the world. Our conception of nature as a mechanism must be superseded by the analogies of organic life and of mind. There is no mere routine, no exact repetition. The

universe is a thing that has grown and is growing. Creation has been, and is, and will be. On every side we see not completed products, but beginnings, means, and materials. "E pur si muove" needs no longer to be said in an undertone. It is a fact, and a fact of far wider and profounder significance than was dreamed of by the persecuted Galileo. The world moves, and God moves in it. He is in every part of it, and He is working toward an end. He works not alone, but with and through the creature. He works not forever with the same means and instruments, but continually with higher organs adapted to higher results. There is a uniformity, but it is the uniformity of an orderly mind of infinite resources.

That most sacred article of scientific *faith* which affirms that the world is governed by system and by law is not set aside, but the conception of it is incalculably enlarged and exalted. Evolution as really signalizes the liberation of human thought as did the breaking up of the solid dome of the sky when astronomy patiently but firmly led man's unwilling soul into the limitless heavens. Under it the laws of nature are no longer the rigid grooves of force in which alone power may move. They have become living things. As the great inductive philosopher said of prophecy, they have "springing and germinant accomplishments." "Behold, the former things are come to pass, and new things do I declare."

What to our minds appear, and perhaps may always appear, as hitherto non-existent manifestations of law have emerged, and must still be expected

to emerge, all along the course of evolution. Into a world of darkness has come light, into a world of inert matter has come activity, into a world of inorganic activity has come life, into a world of unintelligent life has come intelligence, and then into a world of unreasoning intelligence there has come self-conscious reflecting reason, the revelation of the living creature to itself.

For ages upon ages God had wrought his wonders in the world, bringing order out of chaos, complexity out of simplicity, activity out of inertness, filling every part of this fair planet with higher and still higher forms of beauty and strength. The sun rose as now in all the glory of his majesty and quickened every living thing. The creatures rejoiced in its warmth and in its light, but as yet they knew it not. They could be dazzled by its beams and blink a recognition, but they could not think about it. The light was shining in darkness, and the darkness comprehended it not. All nature was replete with the materials of an objective revelation. Every grain of sand, and every drop of water, had its riddle to propound, but there was as yet no growing mind to be puzzled by them.

But at length, when the world was old, there came another kind of light. The creature became a rational and moral being. This was that "true light, which lighteth every man, coming into the world." It was the beginning of the higher revelation. We cannot trace the stages of that gradual dawning of self-consciousness in the race. We can only picture it to ourselves as something like that

which takes place in every individual. There came a time when man's eyes were opened, and he was revealed to himself as a living soul. Nor was this the whole contents of the primal revelation; for conditioned upon the knowledge of self there arose, also, the dim, unformed conception of a higher intelligence to whom the moral self stood related.

Now, having reached this stage, do we find anything which should incline us to believe that the process of creation is finished? On the contrary, everything points to a further development. It would be the contradiction of what we find everywhere else in nature to entertain the hypothesis that an element which marks such a rise in the scale of being, as this of revelation, could suddenly appear in the system and never reappear in higher and more fully developed forms. But in what aspect will it disclose itself? We cannot look for mere repetition, but rather for continuity with variety. We must anticipate that this new and profoundly modifying principle will manifest itself in forms adjusted to the very changes which its own action has wrought.

These changes are certainly very important ones. Up to the time of man's advent the increase of enlightenment has all the appearance of a *free gift*. The creature without effort of its own is advanced in the scale of organization; and as a consequence his mental horizon is widened. Increase in the size and complexity of the brain appears in one species after another, and is transmitted by natural heredity to every individual of it. But when we reach the human species it looks as if we had also reached the

limit of gratuitous endowment, — as if everything henceforth were arranged for the self-education of a being of very great but undeveloped capacities.

All the requirements for such an education are apparently furnished in the human organism and its surroundings. Nothing seems to be wanting either for progress or for discipline. For progress, not only because the human brain, a far more elaborate organ than the requirements of primitive man demands, is a perpetual revelation to itself, but also because the faculty of language permits an accumulation of enlightenment. Whatever has been reached by the most advanced individuals may, under favorable circumstances, become the permanent acquisition of the race.

But, on the other hand, the provision for discipline is no less clear. Everything has been arranged for the development of character through the overcoming of difficulties. The brain of man is an inexhaustible fountain of wants. Physical, intellectual, moral, and religious wants make their appearance one after the other in the order of development. But man and his environment are so adjusted to each other that only the simplest of these can be gratified without effort. No large view of design can fail to recognize a meaning in this latter condition of things.

For example, a most interesting argument to prove a beneficent design in creation has been framed by massing the circumstances which are immediately favorable to the existence and progress of mankind upon the earth. Air, water, light, and heat are so

generally diffused as to make a large part of the world habitable by man; the forests, the rivers, and the sea were, before his coming, stocked with food for him; and the ground brought forth her fruits of many varieties ready to be gathered by his hand. Immense stores of iron, the good genius of material progress, were made in anticipation of a far-off development; and, complementary to this, great deposits of fuel were formed. The precious metals were given in just the right quantities to serve as the medium of exchange and thereby facilitate the intercourse of nations. So, also, the materials of artificial light and the latent forces of electricity and steam were made ready to assist the upward movement of man when he should be prepared to make use of them.

This is, as I have said, an interesting argument for the existence of a preconceived plan in the arrangement of the earth as an abode for civilized man. But now let us go on to observe that the *manner* of this preparation as related to the undeveloped mind of man is equally significant. The air, the light, and the water are free gifts, bestowed unconditionally, and ready to be used almost without an effort. But beyond this, what obstacles are not placed in the way of man's becoming possessed of the world's treasures?

The animals which exist for his food are swifter of foot than he; and the forests which abound with these abound also with creatures that are as ready to make food of him as he of the lesser tribes or of them. The rivers and the sea are full of fish, but

he cannot outswim them. He has stone and wood lying about him ready to be used for weapons and utensils, but the stone is hard to shape and the wood to cut. The iron is ready for him, in great abundance, but not in such a form that he can appropriate it. The most favored lands have no deposit of axes, knives, and ploughs for the encouragement of agriculture and civilization. This most helpful material was almost everywhere mingled with foreign substances, which rendered it useless until the skill of man had devised methods for separating it from them.

The coal, the copper, and the oil are not so difficult to prepare for use. But if we see design in their production, may we not with equal reason be asked to see design in their concealment, in their being so hidden away that man was ages in finding out their use? And what shall we say to the fact that great masses of the coal deposit are so situated that men must fight their way through innumerable difficulties to get at them, only to find the object of their desire guarded by the twin dragons, flood and fire-damp? Again, the fruits of the earth were for the most part given to man, not in the forms in which we know them, but in forms far inferior and less nourishing. Human skill and diligence have done much to make them what they are.

It is not otherwise with the provisions that have been made for the gratification of man's intellectual wants. There is the very same mingling of gratuitous endowment with a condition of things that necessitates striving for higher acquisitions. The mind

of man and the external world have been so adjusted to each other that certain definite impressions and conclusions, practically the same for all individuals, are the immediate result of contact. But when we have said this we must admit further that nothing is more misleading than this same natural environment. The whole creation is written over with an objective revelation, but it is in various and strange languages. Nature awakens the curiosity of man and leads him on, but she does not pour out her treasures for the simple asking. There is, indeed, always something to reward the open eye and the attentive ear, but how unsatisfactory it all is! Never silent to those who interrogate her, she yet fools us with half truths. When we are most serious she seems to jest. Her grandest utterances are riddles. We may say, indeed, that all scientific progress has been the outcome of a series of hard-fought battles.

And how does the individual stand related to the results of this progress? He cannot inherit them by natural transmission. The child of civilized parents comes into a mental environment of the greatest complexity and splendor, — the property of individuals of the race to which he belongs, but not as yet *his* property. No matter how advanced the society into which he is born, or how well descended he may personally be, no part of the accumulated mental treasures of the race can be his, except as the exertion of his individual energies and the development of his personal powers make them, in some modified form, his own.

Do we find anything different when we come to

the sphere of morals? On the contrary, there seems to be far less definiteness in the primary revelations of conscience than in those of the intellect. The fundamental principles of morality are dimly shadowed forth in the least developed conscience. As in the purely intellectual world, certain data are given. There is a sense of duty and obligation, and connected with this, certain vague indications of the direction to be taken. But beyond these the soul is left to work out its own problems. It finds itself in a world of conflicting claims, desires, emotions, passions. And to ascertain the bearing of the sense of duty upon the varied activities to which these urge is the labor of the man and of the race.

Again, man has a religious nature. What provisions have been made for its development? The account given by the Apostle Paul is in perfect harmony with the facts which we have been considering. The Great Educator, he tells us, determined the times before appointed, and the bounds of the habitation of all nations of men "that they should seek the Lord, if haply they might feel after Him, and find Him."

Everywhere in the history of the nations we find this *seeking*. Everywhere the religious want has developed itself at an early stage in man's progress. But history also shows us that the finding was beset with difficulties. Here, as elsewhere, false ways had to be explored, and grievous errors had to be fallen into. The most ancient records of the great civilizations seem, indeed, to indicate that a comparatively pure conception of God dawned upon some nations in

the early stages of their development. In the literatures of India, of China, of Egypt, there are traces of a vague, inconstant belief in God as a supreme and benevolent ruler.

But the course of the human mind is from instinct to reason. Beliefs that have a natural and instinctive origin suffer disintegration that they may subsequently be reintegrated in higher and more distinct forms. The heaven that lies about us in our infancy may be dissolved by the questionings of manhood. But a true manhood builds again with materials drawn from reason and experience. A hard, strange, unnecessary labor this must seem to us except we remember that the forging of character through a process of overcoming, and not the possession of an inherited, unfought-for, instinctive belief, is the end of spiritual evolution.

Now, in view of a plan of self-education so broadly developed and so consistently adhered to in all departments, does it not seem as if any further revelation would signalize a reversal of method? And in view of all that has been accomplished by man, does it not seem as if he might be left to work out the problem by himself? These are two quite distinct questions. For an answer to the first one we must apply to the analogies of human systems of education; and for an answer to the second we must inquire of certain analogies of nature. It will be better for us, on some accounts, to give our attention to the latter question first. We will state it somewhat more definitely as follows: Does the course of evolution make it antecedently probable that the endowment of prim-

itive man will prove sufficient for the realization of a career of unlimited development?

The first thought of evolution is, to almost every mind, that of unbroken progress in a direct line. It seems as if each improvement of structure ought to afford the conditions best suited for the production of a higher type. But such is not the fact. Every definite structural impulse has a tendency to exhaust itself, to become specialized in a permanent type that continues to repeat itself. Progress in this or that particular direction, after a time, comes to an end. If a higher type is to appear, it will have its origin in some quite new structural impulse; and it will proceed from a form much less specialized than the one which it is destined to surpass. As Dr. Cope puts it: "Paleontology shows that the succession of living types has not been in a single straight line. It has been in many divergent lines, and a large number of these have not continued to the present time. . . . Each line, in fact, has developed to an extreme of specialization of structure which it would seem is incapable of modification in any direction very divergent from that which it has already taken." [1]

Now, does the history of the evolution of human society present any parallel to this? It certainly does. The human race in the course of its development has given rise to a succession of types; and these types have borne the same relation to each other as those of which paleontology gives us the history. Every highly specialized, firmly organized society of ancient times tended to perpetuate itself

[1] *Origin of the Fittest*, p. 233.

with less and less possibility of variation. That which *had been* was that which *must be* so long as the type lasted; and the higher types that succeeded were not outgrowths from them, but developments from entirely new impulses, — new ideas, that had their origin in the least specialized, freest part of society.

An emient writer on this subject has told us that while the first great step in civilization was the *formation* of "a cake of custom," the second great step was the breaking of it. "Probably," he says, "if we had historic records of the ante-historic ages, — if some superhuman power had set down the thoughts and actions of men ages before they could set them down for themselves, — we should know that this first step in civilization was the hardest step. But when we come to history as it is, we are more struck with the difficulty of the next step." [1] This *next step*, called, by way of antithesis, "breaking the cake of custom," is more truly characterized as the *formation of a new type*. It is the ordinary fate of extremely rigid types to be *broken*, whenever the environment to which they are specially adjusted is radically changed. The impossible thing in such cases is for the old institution to so modify itself by *growth* as to not only escape deterioration, but to advance, without losing its identity, to a higher place in the scale of organization.

The rigidity of the ancient types was greatly enhanced by the circumstance that in them religion and politics supported each other. In fact, the two

[1] *Physics and Politics*, by Walter Bagehot, Esq., p. 52.

spheres were in early ages one. Government lived by religious sanctions. It found in these the one effective agency for controlling the eccentric tendencies of rude men, and the one cohesive principle by which it could hold them together. The head of the ancient family was invested with authority and sanctity not simply or chiefly as its progenitor. He was above all things else its king and priest. The power with which the imagination invested him and the sense of duty which fastened itself upon him had an almost purely religious origin. When he ceased by death to be the priest of the family, he became its god. At a later date, when families sprung from a common ancestor became united as a gens, a tribe, or a city, there was no essential change in this primitive conception, though there was an extension of it. The chief of the tribe, the king of the city, was still the priest. Divinity hedged him about. He had no need of material force; he had neither army nor treasury; but, sustained by a faith that had a powerful influence over the mind, his authority was sacred and inviolable.[1] So also was the whole system of things. The king, no less than the people whom he ruled, was fixed in the iron grasp of beliefs consecrated by the adhesion of untold generations.

It is easy to see how under such a régime the ordinary sense of duty would be called forth solely in defense of that which was inherited, that which was known to be ancient. Innovation was an act of impiety not for a moment to be tolerated. It demanded more than opposition; there must be expia-

[1] *The Ancient City*, by Fustel De Coulanges, p. 38.

tion, lest the anger of the gods should fall on the city that permitted the man of ideas to live.

How, then, we must now ask, has it been possible for new types to arise and to supplant the old? Let us seek first for the explanation in that original endowment of the human race that we were just now considering. As in the physical organism, so in the social, progress is manifestly provided for in the nature of things; or, to speak more exactly, in the instincts of man. As soon as the instinct for self-preservation is satisfied, other instincts bestir themselves, the gratification of which involves change. They may be felt at first only as an indefinite desire for a fuller, more satisfying life. But erelong they take definite forms. The desire for wealth is one form. The desire for a deeper insight into the realities of the world, and for a wider intellectual outlook, is another. The desire for more perfect social relations is another.

But how are these instincts to achieve any free or large development under the conditions that we have been considering? As fast as they make their appearance they are led captive by the machinery of the specialized society into which they are born. They are made to work in harness, to subserve well-recognized interests. Like the heads of certain tribes of savages, or like the feet of Chinese women, they are coerced into forms not contemplated by nature. Some of them are allowed a partial gratification; but just in so far as they tend to antagonize the established order, they are repressed. Not by the permission of this order, therefore, but only

in opposition to it can they lead to a higher social type.

Shall we say, then, that these tendencies to variation and expansion give rise to a new type only in those cases where they are sufficiently strong to break through the established order and make good their development in spite of it? I think we must in general give this account of it. But, let us observe, the breaking through the old order is only the removal of an obstacle that bars the way to progress. There can be no formation of a higher type unless there be some new formative idea. Without this the tendencies that make for variation work only in the interests of destruction. They antagonize not simply the old order, they antagonize each other; and the resulting changes are not in the direction of advance to a higher type.

It is, then, for the emergence in the world of new formative conceptions that we have to account. Whence have come those germinal ideas that have revolutionized and reconstructed society because they had the life and power of a great development in them? — ideas that once found no place in human thought, and that, when they appeared, were foreign and alien to its most cherished beliefs. Let us not make the mistake of thinking that they have had an indefinite, impersonal origin. It is often said of such ideas that they spring from the masses. They are thought of as being in everybody's mind at once, or, according to a popular phrase, "in the air." Unquestionably there is a certain amount of truth in this. The restlessness of instincts that press for

satisfaction must be felt by a large class before any new idea, however true or great, can exercise a transforming influence upon society. But the idea itself has no impersonal origin. It may be that we are able only now and then to trace to their personal origins the great conceptions that have moved the world. But could we so trace them we should probably in every case come upon a distinct revelation.

By revelation I mean the direct assistance and enlightenment of a human mind by a mind infinitely greater than its own, — a mind with which it is organically connected. Not that such assistance and enlightenment is confined to the few exceptionally great ideas whose transforming power is clearly marked. We can, I think, recognize the same working of an intelligence greater than our intelligence in the more ordinary productions of men. In every department of intellectual life there are those who can testify to the reality of that which we call inspiration.

In a former chapter we took note of a class of phenomena to which the name *unconscious cerebration* has been given. A constructive process is carried on in the brain, quite independently of our consciousness, and the outcome of this is the satisfactory solution of a problem, for which we had vainly labored in our hours of consciousness. We examined the explanation of this that is offered by the "philosophy of the unconscious;" and we found it empty, — the merest hollow shell of a phrase. The results we had to account for had all the appearance of being the outcome of intelligence; and not only so,

they were clearly the manifestation of a higher intelligence, a stronger mind than the one in which they were discovered as a free gift. May we not trace to this source also those special inspirations that come to gifted men, in poetry, in music, in every branch of constructive science?

But it is not in these that we find the most impressive evidences of an intelligence that works with and supplements the deficiencies of our intelligence. It is in the sphere of the moral and the religious life that this power not ourselves shows itself in its most commanding forms. Only when a great world-moving, world-transforming idea breaks through the ordinary routine of men's thoughts are we filled with the consciousness of a grandeur in human history that is more than human.

For illustration's sake I will specify three ideas that seem to me to bear the most unmistakable impress of a mind greater than the human mind, through the instrumentality of which they have been communicated. First, the idea of *the brotherhood of mankind.* How in that old world of exclusive, mutually repelling nationalities could such a conception spring up? Certainly not from those whose interest it was to keep everything unchanged. Certainly not from the multitude superstitiously fearful of the slighest deviation from the beaten track. It came from the philosophers, the intellectual outlaws of society. We cannot say who first conceived the idea that the religion of the state was not the highest kind of religion, that there were duties that should take precedence of those prescribed by it,

that the individual is something more than a member of the city or the nation to which he belongs.

These ideas were enunciated in a very positive form by Zeno, the founder of the Stoics, and under the fostering influence of that sect of philosophers gave rise to a fundamental principle of Roman law: the principle that there is a bond of unity among mankind that transcends and annihilates all class or national limitations.[1] But through a succession of minds, antecedent to Zeno, we can trace the conception in somewhat less developed forms. Sometimes it is little more than a protest against the narrowness of the old institutions. Often it is more destructive than constructive. But wherever it originated, it was a higher thought of the world, a dim comprehension of a development yet to be, that had its spring neither in interest, nor in experience, nor in logic.[2] It was of the nature of a prophecy, that anticipated a wholly new order of things, an order not understood by those who with the greatest intensity of conviction enunciated its principles.

Another idea that has had a most transforming influence upon the world is that which assures us that there is virtue in the pursuit of truth *for its own sake.* With our experience of civilization we

[1] Lecky's *History of European Morals*, vol. i. pp. 294, 295, and vol. ii. p. 42.

[2] "In primitive ages religion did not say to a man, showing him another man, — That is thy brother. It said to him, — That is a stranger; he cannot participate in the religious acts of thy hearth; he cannot approach the tomb of thy family; he has other gods than thine, and cannot unite with thee in a common prayer; thy gods reject his adoration, and regard him as their enemy; he is thy foe also." — *The Ancient City*, p. 124.

are able to justify this idea by its practical results. But we have to remember that it found a place among the unreasoned convictions of great men long before it could be so justified. Through all the ages established religion and popular prejudice have been arrayed against the principle of seeking truth for its own sake. He who acted in accordance with it was an enemy of society and of God. Yet the idea has lived and conquered, till it has become a commonplace. This also, then, I call a revelation and a prophecy.

The third great idea of the world that seems, clearly, to be of superhuman origin is that which recognizes as *one* the God who is the creative and sustaining principle of the universe, and at the same time the intimate of every human soul.

Religion as the outcome of the ordinary working of the human mind has been derived from two quite distinct sources. Fustel de Coulanges gives the following account of this dual origin: "In this race (the Græco-Roman) the religious idea presented itself under two different forms. On the one hand, man attached the divine attribute to the invisible principle, to the intelligence, to what he perceived of the soul, to what of the sacred he felt in himself. On the other hand, he applied his ideas of the divine to the external objects which he saw, which he loved or feared; to physical agents that were the masters of his happiness and of his life. These two orders of belief laid the foundations of two religions that lasted as long as Greek and Roman society. They did not make war upon each other; they even lived

on very good terms, and shared the empire over man; but they never became confounded. Their dogmas were always entirely distinct, often contradictory; and their ceremonies and practices were absolutely different." [1]

Now, let us remember that this same Greek and Roman society was the soil into which Christian monotheism struck its root and made its first strong growth. The Christian idea took up into itself and, as it were, absorbed these two divergent religious motives.

That we may the better understand the significance of this change, let us see what the antecedent development from these principles had been. From the introspective root was developed the religion of the family, the worship of ancestors, and later on the god of the tribe or city, with the priest king as his representative. From the consciousness of external nature sprang numerous deifications of the elements that, with similar attributes, were worshiped under a variety of names in different communities. Then came another great change. Greek philosophy gradually melted down the crude thought of earlier ages, and attempted to separate the truth from the baser material with which it was combined.

Under this treatment the religion that had originated with the dim recognition of a divine element in man was brought back to the point whence it had gone forth to lose itself in external forms. It has been said that before Socrates men never thought of a duty except as a command of the ancient gods.

[1] *The Ancient City*, pp. 159–161.

It is certain that the great distinction and main offense of his teaching was that he separated morals from religion. He robbed the little gods of their prestige and authority by discovering the principle of duty *in* the human conscience, and by holding that the concrete forms of duty must be ascertained by a diligent study of the relations of actual life. In the course of the intellectual and moral development that resulted from this new doctrine some minds tried to keep their hold on religion by elevating the conception of it to correspond with an expanding morality. But for the most part religion remained stationary while ethics developed away from it, and in antagonism to it.

Under the stimulus of the same intellectual quickening, the godlike beings that had sprung from the contemplation of external nature gradually vanished out of sight. Men not only had their eyes opened to see through them, but the more religious and imaginative had roused within them the consciousness of a vague yet more real existence, of which the deposed ones had been only the partial and very misleading representatives. But in this department of thought, also, the general drift was away from the gods and away from everything that had been known as religion. In the enthusiasm of a new intellectual life philosophers were confident of the ability of man to live without its support. The established conceptions of the gods were so far below their apprehension of the ideal man as to seem hopelessly out of relation to it.

But this was only transitional. As thought and

life moved on it became more and more evident that morality could not stand alone, — that its truths, though elevating and unmistakable, were, without God, things separated from the vital element of the universe. Stoicism had moral and intellectual treasures of great value. Epicureanism had the same. But somehow both were like cleverly constructed machines that will not work. The stream of energy that moves the world could not be made to enter them.

When, therefore, it was clearly seen that morality without religion is morality without life, a seeking after God ensued. Men began to search diligently among the ruins of their old conceptions for some germinal grain of truth that might be quickened in the light of a higher morality, some forgotten and overlaid spring of the water of life that should make the empty veins of their ethical systems throb again. By the idealization of popular conceptions their poets labored to construct a God that should satisfy the conditions of their higher human creed. "As regards the educated classes," says Uhlhorn, "we may perhaps come to this conclusion: faith in the gods of the old religions had disappeared. . . . The majority substituted a kind of monotheism. They imagined something godlike above the gods, a divine first principle, or at least they had a presentiment of this without clearly discerning it, and especially without being able definitely to distinguish it from the world. This dissolving polytheism led naturally to pantheism."[1] But all was unsatisfactory.

[1] *Conflict of Christianity with Heathenism*, translated by Egbert C. Smyth and C. J. H. Ropes, p. 51.

Philosophy could not of itself reach a living conception of God. But what it could and did bring men to was a hungering and thirsting after God. What Græco-Roman culture could not produce for itself, that it was ready to receive. So humble had it become in its need that, while conquering the world, it could stoop to ask a religion from any nation that had anything satisfactory to offer. The earnestness and depth of this feeling is powerfully manifested in the zeal with which multitudes devoted themselves to the severely ascetic discipline of the god Mithras. This was a progressive cult with many degrees of consecration. Its disciplines included the rack, horrors, flagellations, standing and lying in ice and snow sometimes for twenty days at a time. "They were so severe that many lost their lives in them. Yet great numbers, including nobles, and even emperors, pressed forward for the privilege of becoming warriors of Mithras." [1]

Not less remarkable was the attitude of many toward the religion of a people who beyond all others were the objects of hatred and contempt. The Jews, with the synagogue and the Greek translation of the Old Testament, were established in almost every city of the empire, and around them had gathered many who had found in the blended morality and religion of their Scriptures the God whom they were seeking. In these, the proselytes of the gate, "devout persons," as they are called in the New Testament, we have the first indications of the new type that is to be. This is the true Israel accepting the higher

[1] Uhlhorn, p. 324.

and purer thought of God enshrined in Judaism, and ready for the fuller revelation of Christianity. Their position is unique. They do not become Jews. They reject just that part of Judaism that Christ rejected; and they assimilate, by the selective instinct of normal spiritual wants, just those elements that the Old Testament has in common with the New. The beginnings of things are apt to be obscure. They are often small, and therefore overlooked as insignificant. But they are of all things the most important. It will therefore be worth our while to study this phenomenon, that we may understand, so far as may be, the nature of the adjustments that produced it. Let us scrutinize first the want that is to be met.

The thought of the age had, as we have seen, worked itself free from polytheism. It had achieved a speculative monotheism. But in the process it had emptied the thought of God of almost every characteristic. He was the all-pervading and most adorable essence of things; the energy and life of the world. But the face of this imposing idealization was a blank. It had neither eyes to behold nor ears to hear. It was a god afar off, and not a god near at hand. It was as difficult to associate it with morality as with the love and joy and sorrow of the human heart. Every effort to reach a conception that brought God near to the individual seemed the destruction of the greater thought, and a return to the little gods of polytheism. This insurmountable difficulty led Varro, "the most learned of the Romans," to assume the necessity of three kinds of reli-

gion, — one for the poets, another for the philosophers, and a third for the people. How did Judaism solve this problem?

Did it disclose a deity in whom there were no conflicting attributes? On the contrary, it offered a conception of God made up of those very elements that the philosophers and poets of heathendom had deemed mutually exclusive. It proclaimed one God, the infinite, all-embracing power, the comprehensive intelligence of the universe, who is at the same time the intimate of every human soul. The Hebrew prophets made no effort to harmonize these conceptions. The difficulties that beset the philosophers had for them no existence. They not only affirmed these antithetical aspects of the divine character without qualification or explanation, but they continually associated them in the most startling contrasts.

"Thus saith the High and Lofty One that inhabiteth eternity, whose name is Holy; I dwell in the high and holy place, with him also that is of a contrite and humble spirit." "Thus saith the Lord, the heaven is my throne, and the earth is my footstool. Where is the house that ye build me? and where is the place of my rest? For all these things hath my hand made; and all these things have been, saith the Lord: but to this man will I look, even to him that is poor and of a contrite spirit, and that trembleth at my word." The exaltation of God does not make Him oblivious of the thoughts and motives of the heart. "The Lord is in his holy temple; the Lord's throne is in heaven: his eyes behold, his eyelids try the children of men." He is above all

things the author, the upholder, and the embodiment of morality. He, and He alone, represents the highest ideal of righteousness possible to the conception of man.

Where, then, shall we say was the relief? Is ignoring the difficulty equivalent to a solution of it? Isaac Taylor, in allusion to this antithetical characteristic of Hebrew theology, truly remarks: "The theistic affirmations that are scattered throughout the books of the Old Testament are not susceptible of a synthetic adjustment by any rule of logical distribution."[1]

I think we must affirm the relief to be this, that the prophetic utterances produce conviction without justifying themselves to the understanding; or rather, that they convince the spiritual understanding without appealing to the logical. They are not the conclusions of reasoners; they are the categorical deliverances of those who have *immediate* knowledge, — of those who know without understanding *how* they know, except through the revelation of God in their souls. Conscience, when it is clearly recognized, appears to all men as the mandate of another, — as an inner voice revealing and insisting. But the prophets heard this voice as no other men ever had. The nature of it was not a matter of speculation to them. As Socrates knew, what the world before him had not known, that the source of morality was within and not without, so they knew that the voice of conscience was none other than the voice of God; and this knowledge was a fire within them till they proclaimed it to others.

[1] *The Spirit of the Hebrew Poetry.*

To declare this vital, personal connection of God and man is the distinctive office of the prophet. He is not called to exhibit the Almighty to the eyes of the logical reason. He is not raised up for the purpose of prescribing external moulds into which the thought of Him must be run. He declares, and strives to draw out in others, that consciousness of the truth which, from the side of God, is forever pressing its claims in the face of conflicting influences, both inward and outward. "Wherewith shall I come before the Lord, and bow myself before the high God? Shall I come before Him with burnt-offerings, with calves of a year old? Will the Lord be pleased with thousands of rams, or with ten thousands of rivers of oil? Shall I give my first-born for my transgression, the fruit of my body for the sin of my soul?" There speaks the very spirit of heathen religion. It is the voice of the unemancipated worshiper seeking the direction of a humanly organized infallibility. How does the prophet answer it? "*He* hath showed thee, O man, what is good; and what doth the Lord require of thee, but to do justly, and to love mercy, and to walk humbly with thy God?"

It is not easy to define inspiration, perhaps it is unwise to try to define it. But in the prophets of the Hebrew Scriptures we have the thing itself. In these writers the consciousness of God realizes itself to a degree which is absolutely unique. They know God. Their utterances are their experiences. He has spoken in their souls. They see clearly and with certainty that which others have beheld only vaguely.

And as the scattered, incoherent thoughts of a mind that has sought in vain the solution of an intellectual problem rush together and become organic at the touch of a true explanation, so the ineffectual reachings of the mind after God are merged in *conviction* through the sincere, unsophisticated utterances of souls in which God has truly manifested himself. In the inspiration of the prophets there is nothing contrary to nature. It is simply nature at its highest. It is the prophetic embodiment of the new creature, — of the new type which struggles for supremacy.

History lends no countenance to the assumption that the utterances of the Hebrew prophets were merely the outcome of the national consciousness. They cannot be thus accounted for. More than elsewhere that element in human evolution which initiates variation, that mysterious, separate, transcendental power that comes into the world like a spirit from another realm, manifests itself in them.

From the very beginning they are a higher element, unique in the nation, unique in the history of the world. Anticipating, as they do, in the rudest ages, the latest results of social development, they are an inexplicable enigma to those who fail to recognize the reality and the greatness of the creative factor in evolution. "Where," asks Dean Church, in speaking of the Psalms, "in those rough, cruel days did they come from, those piercing, lightning-like gleams of strange, spiritual truth, those magnificent outlooks over the kingdom of God, those raptures at his presence and his glory, those wonderful disclosures of self-knowledge, those pure outpour-

ings of the love of God?" Where, indeed, but from God himself?

We have then reached a conclusion that justifies the hypothesis with which we set out, namely, that the personal and direct guidance of the process of evolution by the Creator did not cease with the advent of man. We said that it would be the contradiction of what we find elsewhere in the world to believe that an element that marks such a rise in the scale of being as revelation should appear, and never reappear in fuller and more developed forms. We said, further, that we ought not to look for mere repetition, but rather for continuity with variety. We ought to expect that this profoundly modifying principle would manifest itself in forms adjusted to the very changes that its own action has wrought.

We then pointed out certain new departures in the history of human thought that seemed to have originated in extraordinary and special impulses directly from the mind of God. In such manifestations we, however, found nothing that we could call *supernatural*. They were held to be *superhuman*, but *natural* in the sense that they were fully in accord with the method that from the beginning has characterized the advance from lower to higher stages of being.

This answers one of our questions; and we may go on to the consideration of the other.

In the adjustments of the human race to its surroundings we found a great volume of evidence indicating that man's higher development was, from the first, intended to be wrought out by a system of self-

education. And in view of this, a gratuitous revelation suggested an interference, or reversal of method. This consideration might, on general principles, be dismissed with a brief answer. But we have inherited certain views with regard to an infallible church, an infallible book, and miracles, which make revealed religion appear to be quite inconsistent with the method that characterizes man's natural education. We must therefore consider these ideas somewhat in detail.

CHAPTER XV.

THE INFALLIBLE CHURCH.

THOMAS DE QUINCEY, in an argument intended to show that the Bible *must* refuse to teach science, says: "It is clear as is the purpose of daylight, that the whole body of the arts and sciences composes one vast machinery for the irritation and development of the human intellect. For this end they exist. To see God, therefore, descending into the arena of science, and contending as it were for his own prizes by teaching science in the Bible, would be to see Him intercepting from their evident destination his own problems, by solving them himself."[1]

This is just as true in every other department of human activity as in that of the sciences. In the last chapter we tried to show that man is so related to his surroundings in *every* direction as to indicate an elaborate arrangement for the development of character through the overcoming of difficulties. At first sight, therefore, the supposition of additional instruction, of a gratuitous revelation in any department, seems to present the great Educator as "intercepting from their evident destination his own problems by solving them himself."

But, on the other hand, the very assumption that

[1] *Essay on Protestantism.*

we have made — that this arrangement is educational — carries with it a contrary implication. Having summoned to our aid a human analogy, we ought not to stop with a half-way application of it. In every system of human education, opposed principles strive together and modify each other. Is it not, therefore, reasonable to believe that the same antagonistic and apparently contradictory elements will appear in the case of God educating the race? and that they will appear in something the same proportions? The first and most important end aimed at in the education of a child is the development and strengthening of its faculties. It is not a question of how to stretch to its utmost and cram to its fullest a receptacle; but more particularly, of how to draw out and train possibilities that are dormant. One prime object of a true educator, therefore, is to create wants. Another is to make the pupil satisfy those wants by his own efforts. He will watch the process. He will be careful not to interfere with it. But mark, he *will* interfere with it when difficulties are encountered that are too great for the struggling mind; or when the stagnation of routine needs to be broken up by the introduction of new ideas.

We may then state our deductions from the educational analogy in the shape of two antecedent probabilities. In the first place there is a probability that the human mind will, at different stages of its course, be furnished with additional data for the perfecting of its education; and, in the second place, there is a strong probability, bordering upon certainty, that no revelation will come to it in such a

form as to involve a radical change of its relation to environment. The new elements furnished will be of the nature of materials for it to work upon, and of stimuli to draw out its powers. They will not be of such a nature as to bring to an abrupt close its career in the working out of its own destiny.

So much for antecedent probabilities. Now let us inquire, — how do these probabilities derived from the analogies of education correspond with that which Christendom holds to be a revelation from God? Clearly, it does not agree with some of the conceptions of Christianity which have been made prominent. It does not agree with that representation which makes it the deliverance of truth in the form of a fully elaborated product ready to be assimilated without effort. Nor with that conception which regards it as an instrument for the subjugation or suppression of human reason. It is diametrically opposed to an assumed revelation that *substitutes* itself through the medium of a book or of the living voice for the reason and progressive moral sense. Therefore, if any one of these ideas truly represents the Christian revelation, there is a difference between natural religion and Christianity that cannot be reconciled.

But these conceptions may be false. They have been protested against by some in every age of the church. If the methods that characterize evolution in its earlier stages are retained in its later, we should anticipate that the historic development of Christianity in response to a hostile environment would give rise to many specialized forms of thought not des-

tined to survive, though serving a temporary purpose. History helps us to trace the rise and growth of many such conceptions, and to measure the influence that environment has had in producing them. Our knowledge of the human spirit and of its reluctance to respond to the highest incentives permits us further to conjecture the origin of some of these forms. And since in us the principle of natural selection has been supplemented by rational intelligent selection, it is our duty to challenge with criticism every doubtful phase of Christianity that comes to us as the result of a long historic development.

First, as to the doctrine of an infallible church. Is Christianity responsible for the belief that God reveals himself to man only, or chiefly, through the authoritative utterances of an organized priesthood, divinely appointed for that purpose? Let us see just what the points of contrast are between such a view of revelation and that which sees in it the continuity of the methods of nature. Cardinal Newman has set forth one of the most important of these in the following words: "The distinction between natural religion and revealed lies in this, that the one has a subjective authority, and the other an objective. Revelation consists in the manifestation of the invisible divine power, or in the *substitution* of the voice of a lawgiver for the voice of conscience. The supremacy of conscience is the essence of natural religion; the supremacy of Apostle, or Pope, or Church, or Bishop, is the essence of revealed." [1]

Here are two very clearly defined conceptions.

[1] *Development of Doctrine*, p. 86.

Which is the true one? We cannot have two supremes. Let us glance at some of the main lines of argument through which the defenders of the supremacy of an infallible church appeal to the reason and common sense of men. First, there is the argument from necessity. "The common sense of mankind," Dr. Newman tells us, "feels that the very idea of revelation implies a present informant and guide, and that an infallible one."[1] The assumption of unbelievers that "a revelation, which is to be received as true, ought to be written on the sun," though it may not be abstractly defensible, appeals, it is said, "to the common sense of the many, with great force." And "till these last centuries the visible church was, at least to her children, the light of the world, as conspicuous as the sun in the heavens; and the creed was written on her forehead, and proclaimed through her voice, by a teaching as precise as it was emphatical."[2]

The subjective ground of this dictate of common sense seems to be summed up in the expression, "We feel a need, and she, of all things under heaven, supplies it." And this need is more explicitly defined in words which Dr. Newman quotes from another: "The human mind wishes to be rid of doubt in religion." Now, on the ground that man's desires afford a reliable basis for inferring exactly what will be given him, these arguments are forcible. And if we advance further to the position that what appears to man as the shortest way to the satisfaction

[1] *Development of Doctrine*, p. 87.
[2] *Grammar of Assent*, p. 366.

of his desires is always the best way, it is in the highest degree reasonable to anticipate that a benevolent God will answer his prayer for spiritual repose by establishing just such an institution as the Roman Church, with its living voice of infallibility; that He will, through human representatives, give absolute and final answers to all the questions of believers as they arise, feeding them as the sparrow feeds its young, asking only that they shall open their mouths and permit them to be filled.

But if, on the other hand, experience teaches us that these wants of man, which are so imperative in the sphere of religion, are not peculiar to that sphere, but are equally urgent in all the other departments of life; if the method of education pursued throughout nature is a hard one, making the growth and survival of men everywhere dependent upon uninterrupted effort and conflict, so that of all the conceivable gifts of God the one most universally desired is *rest*, — rest of a kind that God has not granted; and if further experience has taught us that human desires are not a reliable standard by which to measure the amount of assistance that is good for man, that they are at best indications of certain elements of good which can be useful only when associated with other elements which men dislike and regard as evils, so that the "vanity of human wishes" is a commonplace; then, I say, the presumption which we have drawn from the desires and alleged needs of man is just the opposite of that which we ought to draw. The very fact that the infallible church meets so perfectly the self-indulgent

mood of would-be conscientious men in an age of intellectual conflict, a mood most sparingly gratified in every other sphere of life, affords a strong presumption against its being from the Author of life. It savors of humanity.

How, then, let us ask, does Protestantism stand related to these same needs? Does it deny their reality? Does it affirm that no revelation has been given that meets them? On the contrary, it offers a construction of Christianity that meets them all, though not to the full extent demanded. It meets them in just that modified, limited way that characterizes nature's response to human wants in all other departments. The contrast between the Catholic and the Protestant conceptions of revelation often makes the latter seem the denial of any assistance afforded to the individual. Dr. Newman seems to have been thinking in this way of Protestantism when he addresses his arguments to "those who maintain that Christian truth must be gained *solely* by personal efforts." [1] But Protestantism takes no such extreme position. It interprets our Lord's promise of the coöperation of the Spirit as made not alone to the disciples, or to those who should be added to the number of the apostles, or to their successors in office, but to *all* believers, and as having a continual realization, through all ages, in the experience of seekers after truth. So, again, the difference between the Roman and the Protestant theories is not that one recognizes the principle of a living human medium of revelation and that the other re-

[1] *Development of Doctrine*, p. 83.

jects it. Both affirm the importance and necessity of living teachers and guides, but they construe differently the relation in which these stand to the human reason.

The Protestant construction finds its perfect analogy in the progressive revelations of the scientific world. Science moves onward by hypotheses. It is by the patient verification, or modification, or disproof, of these that it advances continually to broader and truer positions. And what the leaders in each branch of science are to those who interest themselves in it, that the various religious guides, Biblical scholars, philosophers, theologians, pastors, and men eminent for practical Christianity are to those "who follow on to know the Lord." In science the hypotheses of the pioneers of thought are often accepted as if they were verified theories by those who look to them for guidance; and if the evidence in their favor accumulates, they are advanced, in the general acceptance, to a position which is equivalent to certainty. So Christians may rally round a system of doctrine, and treat it provisionally as certain. But as no scientific truth which men have formulated is considered proof against a wider comprehension of facts, so a Protestantism that is true to its principles holds itself ready to reconsider any of its statements that have been the result of efforts to *systematize* the truths given in Scripture.

Let us pass on to the argument from *continuity*. This appeals more strongly than an argument from the nature of things to those who are inclined to

absolutism. The infallible church, it is said, is not an addition to Christianity, it is a continuation from that which gave birth to Christianity. It sustains the same relation to each generation of Christians that the Jewish and apostolic churches sustained to those who were educated under them. We are certainly not prepared to deny that the Jewish established church was sanctioned by God as a temporary expedient. But we have, at the same time, to recognize the existence of another and higher element that was equally of divine appointment, — an element that made for progress, that addressed itself to the moral consciousness of men, and that continually came in conflict with, and overruled, the prescriptions of the established religion. From which of these elements was Christianity a continuity?

It is hardly necessary for us to set down here an answer to this question. At no period of its history did the Jewish church more closely resemble the Church of Rome than in the centuries between the return from exile and the coming of Christ. The priests and the prophets had made common cause, religion was largely identified with outward observances, and the word of the Scriptures was overlaid with a mass of tradition that took precedence of it. The founder of Christianity made nothing of the authority of this church. He went back to first principles. He declared his continuity with the prophets. He did not simply institute a reformation within the church. He overturned the whole establishment as completely as He did the

tables of the money-changers. And to supply its place He founded a new church of an entirely different type.

All the foundations of this new church were principles. As related to the old it was necessarily destructive. It broke through the forms of things to rescue the truths that they were hiding. The Jewish sabbath was one of the most deeply intrenched and carefully guarded of all the old institutions. It had become the chief depository and stronghold of Jewish superstitions. Christ abrogated the *Jewish* sabbath; and to take its place He left only a principle. Having broken down the old, He instituted no exact rules or restrictions with regard to the new. He only laid down the principle that the sabbath was to be adjusted to man, not man to the sabbath.

When He was preparing to leave his work in the hands of others, He instituted certain rites which should help to perpetuate his teachings and unite his followers. What were they like? The Lord's Supper was in one sense a continuation of the Passover. But it was a continuation that served to emphasize the dissimilarity of the two dispensations. The directions with regard to the observance of the old rite were exceedingly minute and exact. The selection of the materials to be used, the manner of preparation, the time when it should be eaten, the clothes to be worn and the manner of eating, — all these particulars must be rigorously observed. The eating of unleavened bread must continue seven days; "for whosoever eateth leavened bread from the first day

until the seventh day, that soul shall be cut off from Israel."[1]

The rite of the new church was as simple, as unexacting, as the other was elaborate and burdensome. The materials used were taken from the table where Christ had just supped with his disciples. There was no specification as to the times or the manner of its observance. The only direction was: "This do, as oft as ye do it, in remembrance of me." It was the same with the rite of baptism. The apostles were told to baptize those who were brought into the new church. But no directions were given as to the time or manner in which it should be done. And when some of the early Christians began to attach an exaggerated importance to the ceremony, we find Paul thanking God that he baptized only a very few of them, and expressing contempt for the rite as compared with the preaching of the gospel.

In short, the Founder of Christianity sent his followers forth unburdened by institutions or restrictions. He left them free to organize themselves, in one way or in a variety of ways, as expediency should dictate; and they demonstrated their continuity with Him by separating themselves more and more from the entanglements of the Jewish church.

To recur to the analogy of the last chapter, Christianity was a religion of an exceedingly generalized type. It was capable of giving rise to innumerable specialized types without losing itself in any one of them, and without exhausting its originating power. The Church of Rome, in so far as it was informed by

[1] Exodus xii. 15.

the principles of Christ, was a continuity of Christianity. But its absolutism was the continuity of that specializing tendency that works both in nature and in human affairs for the production of definite and unprogressive forms. This tendency is not in itself an evil. Up to a certain point, the conservation of type is no less essential to evolution than the progressive principle of variation. Definite, unprogressive forms have their day of usefulness and supremacy. But their supremacy becomes the reverse of useful when it opposes itself to all further progress. To quote Bagehot once more: "The whole history of civilization is strewn with creeds and institutions which were invaluable at first and deadly afterwards. Progress would not have been the rarity it is, if the early food had not been the late poison." [1]

[1] *Physics and Politics*, p. 74.

CHAPTER XVI.

THE INFALLIBLE BOOK.

In this chapter I shall try to convince the reader that the Sacred Scriptures are not, as regards method, the antithesis of the revelation given in nature; but that they are, on the contrary, adjusted to the constitution of the human soul in the same proportions. We have seen that man is so related to his physical environment that mere contact, the opening of his eyes and the instinctive movement of his limbs, puts him in possession of a number of valuable fundamental facts with regard to it. There is, in short, a large bestowal of knowledge as a free gift. But supplementary to this we found ample provisions made for development by means of glimpses of knowledge, half-truths, suggestions, that stimulate the imagination and act as a continual incentive to intellectual effort and practical experiment.

If, therefore, a book is to be made the medium of a special communication to man, we should anticipate that something the same proportions between truths absolutely given and truths indistinctly outlined would be observed. We should expect to find in it a ministration to present wants, and also a ministration to the requirements of future development. We should look for the enunciation of certain ulti-

mate facts that should stand out with great clearness. And, on the other hand, we should expect these to be accompanied by many secondary aspects of truth.

These expectations are fulfilled in the proportions of Scriptural truth. The following are some of the fundamental facts: There is one God. He is holy, but He loves men. He is just, but He is merciful. His laws are inexorable, but He forgives. He is infinite, but He can and does dwell in the human spirit. Complementary to these we have certain ultimate facts with regard to man. He is made in the image of God. But he has not yet realized all that is involved in these words. He is in many respects the moral contradiction of the ideal man. It is the great end of his existence to attain to this ideal. He *can* and ought to realize it, but he *cannot*. He can do nothing without the coöperation of the Spirit of God. The Spirit has worked with man in the past, though he knew it not. God has now made man his conscious associate. If man wills to enter into this relationship, his sins may be forgiven, his disabilities may be overcome, and the goal of life may be reached.

I do not assume to have exhausted the list of ultimate facts, but the above are sufficient to illustrate what I mean by the clearness of the positions of Scripture. Like the general impressions which all men receive from nature, they afford a basis for action; but they are not readily harmonized. They contain elements of contradiction, which, all through the ages, have exercised severely the speculative and moral reason of man. They have successfully drawn the imagination, man's creative faculty, into

realms transcending sight, and at the same time they have made it possible for him to dwell and work in these regions without utterly losing his way. As speculation in other departments is continually called back to start afresh from the necessary postulates of thought, so here we have secure outposts from which to take anew our departure when involved in difficulties.

What, now, do we find as to the Scriptural environment of these ultimate truths? First, it is of a most varied nature. All the literary forms in which the thought of man has been cast are represented. We have history, poetry, prophecy, hymns, prayers, addresses, proverbs, allegories, teaching of the most simple kind, transcendental philosophy. Its appeals are made from many points of view and adjusted to the ever-varying emotions of man. It argues, it illustrates, it persuades, it commands, it threatens, it entices. It comes to us through men of great diversity of character and temperament.

Secondly, because of this variety, there are many things in it difficult to be understood. As related to the great spiritual facts with which it is associated, this environment is just what the materials of the external revelation given in nature are to the ultimate data of thought given in consciousness. Every part of nature is fitted to throw some light upon its great problems, but the many rays from different centres so cross and intersect each other that the first effect is to render our views confused and hard to reconcile. Just so the setting in which we find the great truths of Scripture is certainly

calculated to throw light upon them; but the light comes from so many points that the first effect of an effort to combine these is not the simplification but rather the complication of the problems before us.

All that can be affirmed as to the deceitful nature of the testimony which we receive from the external world through our organs of sense may be as truly affirmed of that which comes to us from the Bible, when considered as a book every part of which has an equally direct bearing on the reader. And the amount of thought which has been expended for the attainment of a perception of unity in the Bible has probably been equal to that expended in any department of the physical sciences for the achievement of a like result. The conception, moreover, upon which we mainly rely to justify our claim as to its unity is just that which underlies the hypothesis of evolution; though, as regards the Scripture, it has had an independent origin, growing out of the patient study of the facts and methods of the book itself.

We find the same God in the events of the Old Testament *history* that we find in the lofty conceptions of the prophets and in the fuller revelation of Christ, because we recognize the principle of growth. And, further, because we perceive all through this history of a revelation two motives at work which, while constantly reacting upon and antagonizing each other, yet conduce to progress. There is that response on the part of the great Educator that meets the present want; there is also a response which has a tendency to change the want by elevat-

ing it. There is teaching adjusted to existing low conceptions and narrowness of view; there is also teaching adjusted to the higher possible soul that is to be. In a general way, the priestly element, conducing to permanency of type, embodies the one; the prophetic element, productive of variation and progress, supplies the other. All through the course of this history individuals, far in advance of their age, anticipate the more highly evolved type of spirituality that is to emerge in the fullness of time; and their inspired utterances presage the decay and disappearance of conceptions that have only subserved the necessities of infancy.

But does an evolution in the old dispensation afford any ground for expecting an evolution beyond it? Is not this very phrase, the "fullness of time," an indication that the course of progressive revelation was completed in Christ and his apostles? For an answer to this question we must investigate not only the later revelation, but also the characteristics of the society to which it came. The phrase "fullness of time" may as legitimately refer to one important epoch in the course of evolution as to an assumed termination of it. If to a termination, we should expect to find a society of an advanced and homogeneous spiritual development, and adjusted to this a revelation calculated to subserve not so much the ends of progress as of stability. The forms of it would be exact, the depositories of it would be carefully guarded. Its doctrines would be systematized. It would give men developed, harmonized truth, rather than germs of truth that should ex-

pand in the growing life of progressive souls. In such a revelation we should expect to find only *one* of the two motives which work together and offset each other in the Old Testament. The prophetic element would be wanting.

It will not, I think, be difficult to show that our Saviour was both priest and prophet. Indeed, when we look for evidence of this, the prophetic, uplifting, disturbing element is at first sight far more apparent than the restful ministration to present wants. For evidence of the latter we may refer to the miracles, which as signs and wonders were calculated to gain immediate acceptance for spiritual truths; and we may remind ourselves that "He had compassion" on the people and taught them "many things" that were not recorded. But in the great body of his recorded teachings we recognize the prophet speaking in the language of metaphor and hyperbole, scattering seeds of truth that were to develop with the developing kingdom of heaven. He was a perpetual enigma to those who surrounded Him. Though He came for the purpose of saving men by instructing them, and though He nowhere contemplates a salvation that works otherwise than through the conscious apprehension and appropriation of spiritual truth, He addressed himself to the generation that received Him in riddles.

In his private conversations and in his public discourses it is the same. To all his auditors He seems to be saying, "Go thou and learn what that meaneth." His benedictions are startling: "Blessed are the poor." "Blessed are they that hunger and

thirst." "Blessed are they that mourn." He lays down principles and illustrates them with concrete examples; but often the illustrations are as hard to understand as the principles. Laws of conduct are given without modification, and in such absolute, extreme forms as to make them seem the contradiction of reason: "Take no thought for the morrow." "Resist not evil." And the amazement of his hearers was probably in no wise lessened when He illustrated the first precept by an allusion to the lilies that "toil not, neither do they spin," and the other by the special injunction, "Whosoever shall smite thee on thy right cheek, turn to him the other also." Christianity as developed has taken neither of these commands literally. It has looked for truths underlying them that could find expression in and through the organization of society on a rational basis.

In some cases, where we might be tempted to insist on a literal interpretation, we are debarred from such an error by a counter utterance which obliges us to rise above the letter to a higher conception. "Whosoever will confess me before men, him will I confess also before my Father which is in heaven." And, on the other hand, "Many will say to me in that day, Lord, Lord, have we not prophesied in thy name? and in thy name have cast out devils? and in thy name done many wonderful works? And then will I profess unto them, I never knew you: depart from me, ye that work iniquity." That construction of Christ's method which, in the phrase of an eminent critic, defines its leading char-

acteristic as "sweet reasonableness"[1] seems the purest irony when applied to any of the conversations of Christ with those who gave him a puzzled attention.

Let us take two instances, in both of which men who had been roused by the contemplation of his miracles sought a further knowledge of Him. Soon after the feeding of the five thousand an expectant audience of the common people surrounded Him, intent on loaves and fishes. He does not descend to their level, but discourses in a realm so beyond their present comprehension as to be like a foreign language to them. They try to put a meaning into his words by a reference to the bread from heaven which Moses gave; but this is not the clew. He tells them that Moses gave them not the true bread from heaven, "for the bread of God is he that cometh down from heaven and giveth light unto the world." They are not yet discouraged, but answer, "Lord, evermore give us this bread." But a harder saying is to follow: "I am the bread of life." Can we wonder when we read, "The Jews then murmured at Him, because He said, I am the bread that came down from heaven"? Or, further on, when He added, "The bread that I will give is my flesh, which I will give for the life of the world," that the Jews strove among themselves, saying, "How can this man give us his flesh to eat?" Or, still further, when He said, "He that eateth my flesh, and drinketh my blood, dwelleth in me, and I in him," can we regard it as strange that many of his dis-

[1] *Literature and Dogma.*

ciples said, "This is an hard saying; who can hear it?" Or, as the result of this conversation, that "many of his disciples went back, and walked no more with Him"?

The interview with Nicodemus gives us an example of the method of the great Teacher with an educated, thoughtful, sincere inquirer. Nicodemus approaches Christ with the fullest recognition of his ability to instruct him, and of the divine character of his mission. How does Christ receive him? Does He begin to explain himself to the Jewish ruler? Does He unfold systematically the plan of salvation and indicate his personal relation to the prophecies of the Old Testament? On the contrary, without preface, He utters a truth which mystifies the inquirer as he was never mystified before: "Except a man be born again, he cannot see the kingdom of God." Nicodemus is staggered, but the Teacher simply adds, "The wind bloweth where it listeth, and thou hearest the sound thereof, but canst not tell whence it cometh, and whither it goeth: so is every one that is born of the Spirit." The result of the interview is just what we might expect. The inquirer goes away not satisfied, not restful, with doubts dissipated and the spirit of inquiry narcotized. He goes dazed and perplexed, saying to himself, "How can these things be?"

It is needless to specify further. "Without a parable spake He not unto them." To his disciples, it is true, He explained, to some extent, the meaning of his parables, and instructed them as to the growth of the kingdom of heaven, but their answers, even

in his final conversations with them, show how little they apprehended his meaning. He himself alludes in one of these interviews to the veiled character of his instructions: "These things have I spoken unto you in parables; but the time cometh when I shall no more speak unto you in parables, but I shall show you plainly of the Father." How shall we understand this "show you plainly"? It may be taken as an express promise to the disciples that with them the development of truth is to come to an end; that absolute clearness is to take the place of mysteries in their teaching; and that those who come after them will have a body of truth delivered once for all, needing and admitting of no further elucidation or development.

But such an interpretation tallies not with the facts. The apostles do *begin* the work of developing and systematizing the truth that has been sown in their hearts; and there is abundant evidence that in these efforts they were aided by the Holy Spirit, and guided "into all truth," not in the absolute sense of being permitted to exhaust its meaning, but in a sense related to their own needs and to the needs of their special environment. Many of their teachings had primary reference to the particular communities to which they were severally addressed; and these must be understood in and through their relation to the outward circumstances, the stage of development, the habits of thought, and the preconceptions of those whose spiritual welfare they were designed to promote. The writings of different apostles are therefore developments in different di-

rections. They give us aspects of the many-sided truth; and history has shown us plainly enough that in the effort to synthesize these aspects of truth different classes of minds have reached widely different results.

Through all the writings of the apostles, moreover, there is manifested a conception of themselves and of their work which is plainly at variance with the claim of a completed revelation. Paul counts not himself to have apprehended, but forgetting those things which are behind he reaches forth unto those things which are before. "Now I know in part; but then shall I know even as also I am known." Their work is ever represented as one of edification; there is to be development, increase in the knowledge of God, a growing up into Christ of the whole body fitly joined together and compacted by that which every joint supplieth. Churches are reproached for continuing on a lower plane, so that they require to be taught again the first principles of the oracles of God, and because, not having used their opportunities for growth, they require to be fed as babes, when they ought to be capable of receiving the strong meat of a more advanced revelation. In short, there is no indication of a completed development. The work of the Spirit, so far as revelation is concerned, is in its first, though most important, stage. Many strands of truth have been drawn out, but the pattern into which they are to be wrought is suggested rather than completed.

But what, then, we may be asked, is the meaning of the claim of *infallibility* so often made by those

who take their stand upon the Bible as the sole source of the Christian revelation? My answer would be that, as applied to the great mass of Biblical teaching, the claim has no meaning, though its origin is not difficult to trace. When truth passes from one phase of development into another higher up on the scale, it often happens that features are preserved that have no vital connection with the organs of the later type, and which as evolution proceeds declare more and more plainly their useless and obstructive nature. Such a survival was compulsory circumcision in branches of the early Christian church. And such I take to be the nature of the Protestant claim of infallibility applied to the Bible as a whole. Associated with its theory of Scripture, Protestantism has carried along a conception that has had its rise in a view of revelation which is in some respects the contradiction of its own. I mean the view which makes an association of living men the one and only channel of reliable communication between God and the great body of believers.

To put it in another way, the idea of infallibility originated, not as a deduction from recognized characteristics of the Bible, but, on the contrary, as a deduction from what the Bible was clearly recognized not to be; a deduction from its supposed deficiencies. This led to the creation of an extra-Biblical authority, assumed to be infallible, to supply the lacking element.

The Church of Rome has always recognized those characteristics of the written revelation to which I have called attention. And, while emphasizing the

certainty and necessity of development, it has insisted on the insufficiency of the Bible, in connection with the ordinary influences of the Spirit, to conduct that development to higher results. Therefore, since nothing but division and ultimate unbelief can be the result of a Christianity that rests its claims solely on the written revelation, a supreme authority, ruling by divine right, is said to be an absolute necessity. "In proportion, then," says Dr. Newman, "as we find, in matter of fact, that the inspired volume is not adapted or intended to subserve that purpose (infallible guidance), are we forced to revert to that living and present guide. . . . We feel a need, and she alone of all things under heaven supplies it. We are told that God has spoken. Where? In a book? We have tried it, and it disappoints; it disappoints us, that most holy and blessed gift, not from fault of its own, but because it is used for a purpose for which it was not given. The Ethiopian's reply, when St. Philip asked if he understood what he was reading, is the voice of nature: 'How can I unless some man shall guide me?' The Church undertakes that office; she does what none else can do, and this is the secret of her power."[1]

Now when Protestantism attempts to gain this same kind of power by setting up the claim of infallibility, extended to the Bible as a whole, it takes a position that seems to me quite as untenable as Dr. Newman has represented it to be. If the apostles were infallible, in the Roman or in any other sense, they were so only to those to whose wants their teachings were

[1] *Development of Christian Doctrine*, p. 88.

originally adjusted; they cannot be to those who have developed under widely different circumstances and for whom their teachings must be readjusted. This we in substance admit whenever we essay an explanation of difficult points in their writings, and are tolerant of one another's opinions. And, as matter of fact, this claim of Protestants has always, in practice, been transferred from the Bible itself to systems of theology assumed to be necessary and exact deductions from it.

Am I then saying that the revelations that come to us from the sacred book are as uncertain as those which come to us direct from nature, or from the human expounders of nature? I answer, they have like them a large element of uncertainty, and like them a much smaller element of truth that may be clearly stated, on which we can confidently stand and work. If, confining the tremendous word *infallibility* to the one all-wise Being, we content ourselves with the claim that the Bible is a collection of writings specially superintended by the Holy Spirit, and specially coördinated by that superintendence to the spiritual requirements of man in all ages, that the forms in which it is presented are those best calculated to promote our spiritual growth, and, further, that it will accomplish for mankind that which it was intended to accomplish in so far only as those to whom it comes are faithful in the study of its truths and in efforts to realize them through practice; if, I say, we are satisfied to rest in this conception, we have a revelation that is in harmony with the world process, and which appeals to us as a homo-

geneous part of a consistent scheme of human education.

Let us consider a little more particularly our affirmation with regard to the necessity of practice for the development of revealed truth.

Effort, as related to the truth of God's word, reaches out in three directions, corresponding to man's threefold consciousness. There must be intellectual, social, spiritual activity. There must be doctrine, life, and communion with God. This last-mentioned activity, which includes prayer, is dependent on the other two for its health. Just as nerve force in the physical organism is dependent upon the muscular and alimentary systems, so our relations to Scriptural truth are normal in proportion as thought and social intercourse are normal. Or, to put it in another but cognate form, the truest conception of God's relation to us and of our relations to Him can be attained only when reason and experience react freely upon each other in the application and development of the inspired writings.

When reason acts alone, and assumes to present to the intellect in an absolute systematic form those intuitions of God that have come to us clothed in the lofty utterances of the prophets, it falls into error as certainly as when it commits itself to independent theorizing in any other department. A theology that strives to translate the figures of revelation into the terms of a logical formula arrives at substantially the same results that were attained by philosophers under paganism. The tendency is always to some form of pantheism or dualism. This is not the

fault of the data, nor the fault of the reason; it is the result of a false method, — of the application of reason to the working-out of problems which it cannot by itself master.

But what *kind* of results do we achieve by the true method, — that which, consciously or unconsciously, bends from logic to the necessities of human life? Do we reach a perfected final system by its use? We certainly do not, any more than in the development of morals. The systematized form in the one case as in the other is only an approximation to the truth. It is necessarily one-sided, because it bears the impress of the imperfectly developed society to the wants of which it is adapted. Those who have framed systems of practical theology have, more or less designedly, proportioned them to the real or supposed needs of the society in which they found themselves. This was unavoidable; it was useful, but it could not lead to anything absolute.

A similar adjustment to the needs of society has always characterized the evolution of morals. Some one virtue, like loyalty to the state is, at a given stage in a nation's growth, necessarily paramount; and as a consequence other virtues, in so far as they have obtained recognition, are subordinate. That is, they are emphasized or depressed just to that degree which the interests of the leading virtue seem to demand. Thus from a specific kind of virtuous living an *ideal* of virtue is formed, — an ideal that necessarily differs greatly from another, perhaps equally true one, the abstract of a society fashioned by different outward conditions. This thought has

been admirably stated by Lecky: "Although it cannot be said that any virtue is the negative of another, it is undoubtedly true that virtues are naturally grouped according to principles of affinity or congruity, which are essential to the unity of the type. The heroical, the amiable, the industrial, the intellectual virtues form in this manner distinct groups; and in some cases the development of one group is incompatible, not indeed with the existence, but with the prominence of others."[1] In early ages the heroic or military type would in most cases be the prevailing one.

Just in the same way attempts to systematize theology, to set forth the mutual relation of its truths, in forms that should serve the needs of the church militant, at different stages of its career, have in every case produced an emphasized development of some one aspect of God's character and a corresponding subordination of other attributes. But the tendency to regard such an adjustment of inspired truth as perfect and final is at times irresistible. Hostile influences which threaten its overthrow or its modification act as a solidifying press to harden into permanent forms combinations of truth that are only relatively true. Custom helps to drape these forms with the semblance of divine authority, and surrounds them with the woes that stand sentinel over the transgression of the moral law.

But the Bible contains within itself vital principles of growth; and these when times are suitable have power to break through the deposits of custom

[1] *History of European Morals*, vol. i. p. 153.

and authority, be they never so deeply incrusted. The penetrating, wide-reaching morality of the New Testament, slowly and imperfectly as it has realized itself in the world, yet evermore presses for realization. For instance, the duty of loving one's neighbor and even one's enemy, of forgiving till seventy times seven, and on the other hand the wickedness of a vindictive spirit, the depravity of an egoism that is indifferent to the sufferings of others, or that knowingly makes use of them for interest or self-glorification, — these truths continually urged upon the attention have resulted in a profound modification of our institutions, and in a still more marked elevation of our ideals of virtue as between man and man. The mind that has been formed on Christian conceptions is outraged at the commission of acts of cruelty and injustice that in a former age would have excited no attention. And the reaction which this change of view produces upon our thought of God is as necessary as it is inevitable.

I say it is necessary, because otherwise we are threatened with the same gulf between morality and God that in the highest classic thought made a belief in the traditional gods impossible. If an authoritative theology takes its immovable stand upon a conception of God lower than the highest moral ideal of a community, it loses, and ought to lose, the support of the best part of that community. It is not only deficient, it is a positive and perennial source of degeneration. It works for immorality and irreligion. It stands in the same relation to the moral ideal that the low conceptions of the peo-

ple that knew not Jehovah bore to the higher thought of the prophets.

But are we then to give up the God of the Scriptures? Not so, we are to search them anew in the light of our acquired experience. And the result will be this: when we seek for Him with all the heart we shall find there the God of our moral ideal. We shall discover that we have been in the habit of reading the Bible through the medium of a system of doctrine elaborated from it to meet the real or supposed wants of another age. Passages not in harmony with this have appealed to eyes that see not and to ears that hear not. After a little examination they have been disregarded, classed as things hard to be understood, pitched as it were into the mind's waste-basket. But now the things hard to be understood become luminous, they expand and support each other, they develop under the ardor of pursuit and the fascination of discovery; and very probably the impetus acquired will cause the awakened mind to overshoot the mark. But so long as the principle of progress through the free play of thought and experience in the development of the written word is adhered to, this extreme is sure of correction.

But it will be said, "This plan of interpreting the Bible through experience is only another name for finding our own thoughts in it, making it mean what it pleases us to have it mean." If the demand of the highest moral ideal developed under the inspiration of Christianity is identical with that which we desire to find in the Bible, the criticism is a

justification of the method; if not, it is irrelevant. And further, it must be said that no system of theology ever has been or can be formed that is not open to this same objection. Every scheme of doctrine assuming to be drawn from the Bible has been dominated by the moral ideal of its age, and more or less consciously adjusted to it. And, when the advocates of a creed that insists upon the literalness of those figures of Scripture which present God in the most awful but according to human standards immoral light justify this insistence on the ground of the necessity of this presentation as a stimulus to the fears of men, they ground their interpretation of Scripture upon this very principle. They find in the Bible that which the interests of men, in their view, require them to find. They elevate one doctrine and depress another as their experience dictates.

But is there any Scriptural warrant for this coördination of experience with reason in the study of the truths of revelation? It seems to me that such an employment of experience is not only permitted by Christ, but that it is specially prescribed by Him as the indispensable and necessary organ of truth. He does not ignore the intellect. His own discourses and those of the apostles powerfully evoke the reason and the imagination. But for the regulative, modifying, confirming principle He directs us to the concrete embodiment of doctrine in life. "If any man willeth to do his will, he shall know of the teaching." For the proof of his own genuineness He appealed to the harmony of his works

with those of God. "My Father worketh hitherto and I work." "If I do not the works of my Father believe me not." "I am the way, the truth, and the life."

Still more clearly does the experience of a progressive life appear as the measure and test of doctrine when we consider the human embodiments through which God has authorized us to study Him. He has pointed us to a human relationship as affording the most complete expression of himself as related to us. The varied and apparently conflicting aspects of his character that no logical process can harmonize, that must ever antagonize each other in any purely intellectual portrayal of his personality, admit of a perfect synthesis in and through our knowledge of fatherhood. An ideal fatherhood can no more be exhaustively described in scientific terms than the character of God can be described. No one can know it except through experience. It is a concrete idea that can be reduced to its elements only by the destruction of that which is most vital in it.

Now, is this conception of fatherhood a fixed, perfected thing, or is it a moving, developing thing? We have only to look about us to answer the question. And a glance backward into history will show us that the word "father" has represented to men in different stages of society conceptions very wide apart. In the old Roman ideal we have the most striking portrayal of this relationship as absolute sovereignty. It was the prerogative of a Roman father to accept or to reject his legitimate chil-

dren at birth. If he received a son, he received him as his property. While the father lived the son continued to be a minor. He could own nothing. He could acquire nothing. If a will was made in his favor by a stranger, his father received the legacy. The father could at any time sell the son, if it pleased him to do so. The father was the judge of the son, and from his jurisdiction there was no appeal. As judge he might condemn him to death.[1] The same conception of the absolute property of a father in his child is forcibly illustrated in the history of Abraham. That the natural love of a father's heart existed in the Roman and in the patriarch we may not doubt. But it is not difficult to see how this would be obscured and in many cases lost sight of under so one-sided a conception. It was a condition of things most favorable to the production of filial fear and cold reverence, but love had little chance to grow in such an atmosphere. "Of all the forms of virtue," says Lecky, "filial affection is perhaps that which appears most rarely in Roman history."[2]

Now, it is true that departure from this primitive conception is not certainly in the line of progress to something better. This rigid, severe type has its justification in nature. It is a true development of one side of fatherhood, one that was not confined to ancient times, but which, in spirit, continually reappears in history. A change from it may be of the nature of extreme reaction. There is a soft,

[1] *The Ancient City*, Book II. chap. viii.

[2] *History of European Morals*, vol. i. p. 299.

limp type of paternity which lacks every element of morality. What is to prevent men from taking this as the expression of the Almighty Father? If a special confirmation from Scripture is sought for, it can be found. By the segregation of some of the most beautiful passages of the Bible, like the parable of the Prodigal Son and the 103d Psalm, plausible data are at hand for the portraiture of an easy-going, weakly forgiving father.

How is it, then, that so fundamental and all-determining an element of truth as the conception of God has been committed to such a shifting and uncertain embodiment as that of fatherhood? We should indeed be lost in a puzzle of uncertainty were it not for the other principle of progressive knowledge. It is only when the constructive reason brings together all the rays of divine manifestation and passes them through the authorized medium of the purest human relationship that we arrive at the closest approximation to the knowledge of God's character that is possible at any given stage of social development. The severer aspects cannot be left out of the conception. Nature and revelation unite to compel their inclusion. And the course of development downward in any society that ignores them is the demonstration of the fatuity of the one-sided construction. But these severer aspects reach us in a radically changed form when they come through the medium of a father's love. This does not, indeed, explain everything satisfactorily to the intellect, but it takes the crude, hard, extreme conceptions which the intellect presents, sifts, fuses,

purifies, recreates these, and gives them back in a concrete, living form, that we can accept.

There is no end to the interaction of these two organs of truth. Living experience is continually carrying us to a position in advance of our formulated doctrines and compels their modification. But revelation as interpreted by reason, though flexible, is not indefinitely so. It is not mere material to be worked upon. It is also powerfully formative and controlling. Neither element is independent of the other. But by their continual reaction upon each other they bring us into an ever wider and clearer consciousness of God as our Father and infinitely wise Educator, working about us and within us, — a God hating iniquity, but whose mercy is over all his works; — a Father whose very essence is love, but who is none the less unflinching in the application of discipline.

CHAPTER XVII.

MIRACLES.

We have already called attention to the fact that the doctrine of evolution has transformed our conception of the *course of nature*. From thinking of it as a mechanical routine, we have come to regard it as a succession of new departures, of surprises, of hitherto unheard-of developments. These are from our point of view *miracles*. That is, they are wonderful, inexplicable works. They seem at first sight to be accomplished in opposition to the previously established order of things. But further investigation inclines us to explain them as modifications of that order;—modifications brought about by an inventive mind working for ends.

This is a perfectly intelligible and reasonable interpretation of the world. For the wonders that man has wrought by isolating, combining, concentrating, attenuating, imprisoning, and directing the forces of nature should make it easy to believe that the mind which compasses the whole of that of which we know only the rudiments can bring to pass for the accomplishment of his own ends specializations of force which transcend the limits of our knowledge.

When, therefore, we come to the consideration of those particular works that are held to have been

performed in the interests of a special revelation to man, we have nothing to do with the question as to the reasonableness of believing in what *seems to be* a reversal of the order of nature. Having once recognized the existence of a Being who performs such works, the only question can be as to the probability of his having wrought this particular class of wonders for the accomplishment of the end specified.

These works are said to have been wrought for the purpose of convincing men of certain great truths. Now, the importance of the truths communicated is a sufficient warrant for the performance of extraordinary works. But how does this method of convincing men stand related to the plan of self-education that seems to have been marked out for the race on such an extensive scale? If the establishment of an infallible church whose proclamations shall override reason and dictate articles of belief is an unlikely feature of such a system, is not dictation by means of miracles equally, and for the same reason, unlikely? Our answer to this question must depend very much upon the prominence assigned to miracles. If they are held to be the sole or chief supports of our belief in spiritual realities; if their action upon the minds of men is assumed to have been substituted for and to have superseded the agencies hitherto relied upon, there is good reason for looking upon them with suspicion. They have none of the characteristics of the system. Their methods are foreign to its methods. Their effect upon the minds of men is the reverse of that produced by antecedent agencies. Instead of quicken-

ing and stimulating the higher faculties they arrest their development and deaden them.

But if, on the other hand, they are regarded as occupying a distinctly subordinate and provisional place in the system, if they are mere adjuncts of it, we may arrive at a very different conclusion.

Which of these views is the true one?

I believe that a candid examination of the teachings of Christ and his apostles will show that they assigned to miracles (considered simply as wonderful works) a very subordinate position. I say *considered simply as wonderful works*, for the miracles of Christ were also parables, weighted with a profound moral significance which it is the task of the race and of individuals to fathom by a progressive realization. But as signs and wonders they were, for the most part, adaptations, concessions to the attitude of minds not yet sufficiently developed to grasp high spiritual truths. They were supports to those who were young in the faith, in the midst of a hostile environment.

In the exercise of his wonder-working power our Lord was largely influenced by the mental attitude of those with whom He came in contact. In the great majority of cases it was elicited in response to a measure of faith already existing. It was his answer to the cry "Lord, I believe, help thou mine unbelief." He uniformly refused those who came in a hostile spirit, demanding a sign, and seems to have regarded every such challenge as a temptation to fall back on lower methods than those which He had chosen. He recognized the futility of signs to change

the heart and the will. "An evil and adulterous generation seeketh after a sign." "If they hear not Moses and the prophets, neither will they be persuaded though one rose from the dead." He forewarns his disciples that the time is coming when their faith will be sorely tried unless it has found higher ground than that afforded by miracles. "There shall arise false Christs and false prophets, and shall show great signs and wonders; so as to lead astray, if possible, even the elect."

He repeatedly signified his relatively low estimate of a belief that rested on physical phenomena, and his craving for a higher faith in his followers. To elicit an expression of such a faith He said to one, "Except ye see signs and wonders, ye will not believe." To his disciples He said, "Believe me that I am in the Father and the Father in me: or else believe me for the very works' sake." To Thomas, believing because he had touched the wounded hands and side, He said, "Because thou hast seen me thou hast believed: blessed are they that have not seen and yet have believed." When about to leave his disciples He makes to them this astonishing announcement: "He that believeth on me, the works that I do shall he do also; and GREATER works than these shall he do." Can we believe that the superiority here predicated had reference to the amount and not to the quality of the results to be attained? As on a former occasion our Saviour had declared the "least in the kingdom of heaven" to be *greater* than John the Baptist, so here also did He not point to the fact that it was to be the privilege of the disciples,

through the coöperation of the Spirit, to lead men to a plane of spiritual life more elevated and more stable than could be reached by a mere belief in external phenomena? The place assigned to miracles by the Apostle Paul is in harmony with this view: "And God hath set some in the church, first apostles, secondly prophets, thirdly teachers, then miracles."

Some of the miracles recorded in the Bible are signs to the believers of every age, and are pledges to all who find their hold on the great facts of Christianity strengthened by them. But others were specially adapted to the prepossessions of those who witnessed them, and are not therefore easily apprehended by men inheriting widely different habits of thought. Dr. Newman has called attention to the fact that in many cases "miracles which produced a rational conviction at the time when they took place have ever since proved rather an objection to revelation than an evidence for it, and have depended on the rest for support; while others, which once were of a dubious and perplexing character, have in succeeding ages come forward in its defense."[1]

Protestantism has indirectly recognized the provisional office of miracles by not encouraging the expectation of their continuance; and the analogies of history as well as those of physical nature sustain a judgment that has been largely instinctive. The higher we rise in the scale of creation the more does the progressive method declare itself both in the history of ideas and of individuals; and the more extended the development in any given case the

[1] *Essays on Miracles*, p. 9.

more numerous and varied are the elements that have been successively utilized and outgrown. The human infant, capable of an elaborateness of evolution in comparison with which the lives of other animals seem to be almost stationary, begins its existence in a state of absolute dependence. It must be carried, protected, nourished. It must be led step by step till it is able to take care of itself. But what is beneficial at this early stage becomes at a later one not only unnecessary but positively opposed to growth; and all along the course of its development appliances and methods that have been useful are left behind.

The same has been true of ideas. Those that have had the most elaborate history, and that still promise a future of development, are in many cases those which have had the feeblest beginnings. How many great truths have had to be first protected by secrecy, then fought for, then hedged about by law, then fostered and developed by public sentiment, till at last they have attained to an independent and secure position! Does not the religious faith of many an earnest seeker after truth go through analogous stages? And in all these cases supports that were important and necessary to one period of development become cast-off swaddling-clothes to the next.

Christianity, in its successive metamorphoses, has most conspicuously illustrated this principle. At its entrance into the world it claimed to be not a new religion, but a higher form of one that had known a great history. Externally considered, one of the most marked of the phenomena attending its advent

was the abandonment of a time-honored rigid shell that *had* protected, but now cramped and smothered it. Old traditions, old ceremonies, old requirements, old and consecrated places of worship, were left behind. The things to be destroyed were, to the apprehension of the generation nursed in them, very great, very sacred, most essential and indispensable; while those which remained were truly typified by the soft, helpless, undeveloped babe lying in the manger at Bethlehem. Without a priesthood, without a ritual, destitute of prestige, it came to supplant an organized form of religion that had all these advantages. It came to make a direct appeal to the human reason, to establish itself in the hearts and consciences of men, to abolish the necessity of human mediation, and to bring the individual into direct and living communion with God. It essayed to do this by the presentation of certain great facts and ideas, the acceptance of which would be the first step in its career of conquest.

But how were these facts to gain acceptance? Necessarily *not* through the ordinary channels of human authority and influence; for one great end to be attained was to bring man face to face with God, to make him an intelligent agent in that transformation by which he passed out of the relation of subject into that of sonship, out of that of servant into that of friend. The Father must reveal himself as speaking directly to the individual. But the great facts and ideas to be communicated are not self-evident. They do not appeal to the present consciousness of the mass of men; and by their very nature they do not admit of that kind of dem-

onstration which the truths of science offer. The time will come when, accepted and proved in the experience of the race, they will speak for themselves. But now it is necessary that signs of their divine origin should fill the place ordinarily occupied by the prestige of a great name. Until these spiritual facts can be spiritually attested, it is expedient that they should be attested by facts that are their analogues in the realm of sensible phenomena.

Through a man of humble origin God announces the great fact of the forgiveness of sins. When one sick of the palsy is laid before Him He utters the authoritative and startling proclamation, "Son, thy sins be forgiven thee." But to the bystanders this seems only blasphemy, until He manifests himself by adding, "That ye may know that the Son of man hath *power* on earth to forgive sins, I say unto thee, Arise, and take up thy bed and go thy way into thine house." Then, we are told, they "glorified God." He had spoken to them in a language which they understood, by signs that in the current thought of the time were the true and infallible exponents of the power which He assumed. So, also, it was necessary that the great fact of life beyond the grave should be signalized to the apprehension of the senses by the resurrection, and that the reality of the mysterious indwelling of God in the human soul, and of his coöperative working with the individual, should be indorsed by the external phenomena of the day of Pentecost.

But the great end for which these truths were

introduced into the scheme of things could not be accomplished by any such means. Had they been lodged far more securely and more widely in the minds of that generation it would not have been accomplished. For these truths are to be growing factors in the development of man, — in the development of his reason, of his spiritual life, of his whole being. They are the starting points of a new era. They are to be progressively apprehended. They are to be understood as well as assented to, — realized, not simply recognized.

CHAPTER XVIII.

THE CONTINUITY OF THE PROCESS.

"I am come that they might have life, and that they might have it more abundantly."

THE Creator and the Saviour of the world are one. The *Logos*, of whom it is said "he was in the world, and the world was made by him, and the world knew him not," is at the same time the Redeemer of mankind, of whom it is affirmed "as many as received him to them gave he power to become the sons of God." He is the same of whom another apostle says, "By him were all things created that are in heaven and that are in earth, visible and invisible, whether they be thrones, or dominions, or principalities, or powers; all things were created by him and for him; and he is before all things, and by him all things consist." In striking harmony with these passages are all those which describe the great work of the Saviour of men as a new creation, a regeneration, a rescue from death by the infusion of new life.

So closely, indeed, have these two functions of origination and rescue been associated that our conception of the first cannot be modified in any important respect without also changing our idea of the second. If we think of the original creation as

a succession of suddenly completed and wholly disconnected acts occurring within a particular epoch, we almost unavoidably construe salvation as an isolated effect produced once for all upon the soul of man by the power that created him. But if we regard creation as a process, — a coöperative process participated in by the creature, — we are likely to think of salvation as effected gradually and by a like coöperative activity. And not only this. We shall range the latter under the former as part of it. Creation being a not yet completed process, salvation coming in at any point means the rescue, not simply of the product, but of the process itself from miscarriage and failure. Let us make the hypothesis that this is the true conception, and then proceed to test it by the principles of evolution, the Scriptural idea of salvation, and the facts of moral experience. Can it be substantiated without doing violence to any of these?

Our investigation need not concern itself much with matters remotely connected with the history of man; yet it may be worth while to consider briefly this general question: Does creation by evolution, as it appears in the lower realms of nature, easily assimilate the idea of salvation? Does the latter fall into a natural place under the former?

The phenomena of germ life afford a most satisfactory analogy for the answer.

A seed is a perishable thing. "Dust thou art, to dust thou shalt return," is true of every part of it that we can see. But it contains a something which we cannot see, but which we infer from experience.

And the same experience teaches us further that it is uncertain whether the potential life which slumbers in a seed will be quickened into actual life or not. This depends upon many conditions. Foremost among them is the necessity of receiving an impulse from the great source of all vitality, the sun. If this and other conditions are fulfilled, the possibilities of the seed may be realized, otherwise it is doomed. As matter of fact, we know that of the many seeds formed only a few are rescued in the realization of their life principle. This analogy, which extends to all forms of organized existence, animal as well as vegetable, meets us again in the history of species and genera, and, as we should anticipate in a realm which evolution has made its own, we find a term which, though not a synonym for salvation, represents a cognate thought. *Survival* implies salvation; and the former is often made to stand for the latter in the teachings of Christ. Salvation is life, its antithesis is death. The Saviour of the world is the Great Physician who has come to restore to permanent health that which is diseased and on the way to dissolution.

It is needless to dwell upon this. Every one who has pondered the words and elaborate figures used by the founder of Christianity must have been impressed with the wonderful parallelism which they suggest to the processes of nature as interpreted by evolution. But in dealing with this most vital of all questions I shall hope to win the reader not by multiplying analogies, nor by pointing out resemblances in those departments of nature that lie most

remote from each other. But, assuming that we are least liable to variation from the truth when we compare things that are by nature most closely related, I shall confine myself chiefly to a consideration of the moral history of man, and try to show that methods disclose themselves in its successive stages which afford a strong corroboration of the hypothesis that creation and salvation are but different aspects of one process; that men are saved not by being snatched out of the process of the world, not by being turned back to a condition previously occupied and lost, but saved into a higher state by the progressive development of spiritual life.

The moral history of man naturally divides itself into two great epochs: that which antedated the incarnation of the Saviour of the world, and that which is subsequent to it. One great contrast of these two periods lies in the degree of knowledge which we possess concerning them. The former is largely prehistoric. The latter is historic. The former, presenting us with a variety of results of the most interesting character, reveals but little as to the sources from whence they have sprung. The latter lays before us the whole course of its history from the feeblest beginnings to the present time. Any interpretation of the former period, therefore, commends itself to us in so far as it harmonizes with the most approved construction of the latter. The better known must be the justification of theories with regard to the less known.

As to the beginnings of the former period, the

Bible gives us some very important information embodied in a figurative account of the great ethical event of the race. From this theology has constructed its conception of man before and after the Fall. Now I think it cannot be questioned that a doctrine or conception that takes its departure from a figure must always be open to modification.

In so far as it refers to the figure as authority, its right to existence is hypothetical; and neither by the rules of logic nor of morals can those who hold it be justified in refusing to entertain additional light from any source. The principles of evolution offer a revised interpretation of the story of the Garden of Eden, based upon the careful study of an older revelation from the same author, — a revelation which is not figurative, but which men have only begun to learn to read in these latter days. I shall try to show that this interpretation, though differing in many respects from the traditional one, does no violence to the Scripture narrative of the Fall, but, on the contrary, brings out all the proportions of that narrative with greater strength and fullness of meaning, while it throws a flood of light forward, illuminating the whole realm of salvation.

The certain information conveyed in the narrative of the Garden of Eden may, it seems to me, be fairly summarized as follows: There was a time when man was morally innocent. But he did not remain in this condition. He lost his innocence, and became a guilty sinner. This came about through the dawning of a moral sense in man, a temptation, an act of disobedience, and a great moral illumination. Now

in the expansion of the narrative of the Fall, theology has emphasized two of these factors, but has failed to let the others have much influence upon its deductions. If it had given the same prominence to the fact of moral illumination that it allowed to temptation and disobedience, we should not have had the not-yet-moral man presented to us as a developed positively moral being, having a full knowledge of the law, and yielding a perfect obedience to it.

Evolution calls attention to this neglected factor. It even makes it the prominent one. It represents it as the new, hitherto unevolved principle which, entering in, changed the character of other principles that had long been active in the world. Before this moral enlightenment temptation was only desire; disobedience was simple inadvertence. In its absence man could not have become a sinner by any number of acts transgressing the moral law as we know it. Animals constantly perform actions which would render them sinners if they occupied the moral position to which man has been advanced. From being innocent they would, if thus advanced, without any change in their actions, become thieves and murderers; they would be cruel, intemperate, incestuous, base, sordid. But, on the other hand, it was equally impossible for man to be a *holy* or *righteous* being without the incoming of this new element of moral consciousness which the Scripture narrative of the Fall describes.

In giving prominence to this fundamental condition of sin and righteousness, therefore, evolution brings distinctly before us the important fact that

what we have been in the habit of emphasizing as the *Fall* was a result of the *rise* of man; and that the rise is by far the more important aspect of this great crisis. It was the entrance of that true light that lighteth every man that cometh into the world. It was the birth of conscience. It was man's first intimation of contact with God. It rendered possible the new creature in Christ, the partaking of the tree of eternal life, when the fullness of time should come.

The lighting up of this side of the story makes it, I grant, a different thing; but it does not render it less difficult to harmonize with our belief in a loving and all-wise Being, the same yesterday and to-day and forever, who has foreseen the end from the beginning, and whose plans realize themselves without failure. It relieves us of the conception of a God whose purposes were thwarted by the willfulness of his creatures. It makes the Fall, *sin*, an incident in the elevation of the creature to a higher grade of existence.

It may, indeed, be objected that the knowledge of good and the rise of man in the scale of being are not the aspects of the Fall which the narrative itself or the history of this period emphasizes. But "πρῶτον τῇ φύσει ἔσχατον τῇ γενέσει." We are at the beginning of a great process, which is to be traced from its inception to the advent of its final stage. And, naturally enough, the narrative, while embodying all the vital elements of the situation, gives prominence to those which first in the order of development became active. The immediate result of moral enlight-

enment was the realization of moral evil. And the knowledge of good, though it came at the same time, is in the story related to evil as a background of light is related to a foreground in which darker figures represent action.

From our position of Christian enlightenment we know as a certainty that which was only vaguely hinted at in the earlier record, namely, that the human race will triumph over evil and realize the possibilities opened before it in the knowledge of good. And just as a man in reviewing the events of a successful life will often fasten upon moments which at the time seemed pregnant with evil as the crises which forced him into the working out of a higher destiny, so the true significance of the Fall is flashed upon us by the light of our later experience; and we find the fullest justification for the position that in its highest and most enduring aspects it was the rise of man.

But we must not enter upon the consideration of the later era till we have come to a clear understanding of the condition into which man was brought by the Fall. What, in other words, does evolution make of sin? In the first place, I think there is no risk in saying that evolution would characterize sin as progressive. It came into the world as the result of a moral enlightenment that has extended only very gradually over the wide area of conduct which it now covers. The study of historic man leads us to believe that sin, as an abstract idea, had no existence in his mind till long after he had recognized it in many concrete forms; and that, in the first instance,

it was confined to some definite central spot of behavior. With regard to some one alternative, he became conscious that the choice of a particular course of action was superior to the choice of its opposite, and that the recognition of superiority carried with it a sense of obligation.

This position is fully indorsed in the Scriptural account. Man might eat of every tree of the garden save *one*. It was only in relation to one particular act that he felt the "thou shalt not" of conscience. This feeling was not as yet the *knowledge* of good and evil. It was its dim foreshadowing. It contained the intimations of a world not yet realized. Knowledge came with action. Disobedience to conscience brought remorse, and remorse illuminated the fallen as well as the higher possible self that might have been. Once awakened, this moral sense extended itself with the ever-widening relations of life, and with the increase of the self-reflective power in man.

But does evolution offer any explanation of the fact that man chose, in so many cases, the downward instead of the upward course? I think it has a very natural one. It is a fact of nature as well as a truth of revelation, that God has chosen the weak things of the world to confound the mighty, — things that are not to bring to nought things that are. And if we will bear in mind that the period during which moral evil has sway in the world is the period of the minority of the principle that, in its fully developed strength, is to triumph over evil, we shall not be at a loss to account for sin. Unmoral man

was, according to evolution, a creature of very positive qualities, a self-poised, energetic being of strongly developed tendencies. He had *roughed it* in the world, he had won his title to existence by a hand-to-hand conflict with his environment, and had thus matured habits and instincts that bore him along in certain well-defined lines of action with a force not easily turned or thwarted.

Into this vigorous life comes the new principle, the dawning of the spiritual nature. It comes not with the power of the rushing, mighty wind, but as a "still, small voice." It comes as an interruption, as a command to refrain from doing something that the whole strong current of the man's past life urges him to do. It comes as an authority *external* to the soul, even though it arises within it. This peculiarity of conscience, though it is never fully explained till man has advanced to the knowledge that God works within him, is characteristic of its least developed stages. It may appeal to man as duty to parents or offspring, as the command of a divinely commissioned government, or as the insistence of an *alter ego*, — a better possible self, that ought to be realized. But in every form it stands apart from the present self as having separate and divergent interests. It makes light of the authority of the self in subjection to which primitive man has lived, fought his battles, and conquered his enemies; it pronounces this self to be evil, in so far as it remains the end instead of becoming the means to higher things. It insists upon subordinating it. There is, therefore, a natural rebellion of the *ego* that is in possession. All that

self-assertion, that *amour propre*, that is the outgrowth of the instinct of self-preservation on the plane now occupied, rises up to contest the higher promptings of conscience.

But, besides this, there is in our members a deep-seated physical basis for sin, a *vis inertiæ*, which works against the stimulus of the Spirit. By this I do not mean a state of passivity, but rather the tendency to continue in the direction of an impulse imparted, of a momentum already acquired. In the moral sphere this becomes obstinacy, but when regarded merely as the characteristic of a physical organism, it is a tendency to the flow of energy in the lines of more or less permanently established and specialized function.

By far the greater part of the vital expenditure of each day, even in a somewhat varied life, follows the thoroughfares of habit, of unconscious and almost mechanical routine. It is, as a rule, only a most inconsiderable part that goes to the modification or improvement of this routine. A man may be exceedingly active within the lines of established function without much real effort. Given health, and a not too difficult environment, and life courses along the well-worn channels not only of the vegetative processes of the body, but also of conscious labor, with a sense of exhilaration. A slight element of change adds zest to this routine, but whenever the volume of vitality is to any considerable extent diverted from this to the formation of new and more elaborate functions there is pain. There is first the pain of unsatisfied craving. Each depleted nerve centre

cries out, in its own way, against the cutting short of its accustomed supply of vital stimulus. It besieges the will to break down, if possible, the new order of things, and this internal warfare destroys the careless flow of life. Nor is this all.

To the pain of repression is added the labor of constructive effort, the effort to realize a positive morality. A late writer on ethics has well said: "Morality is internal. The moral law has to be expressed in the form, *be this*, not in the form, *do this*." [1] It involves not a change of outward behavior merely, the conducting of life into new channels, but more than this, the making of the channels themselves. But does morality call upon man to make these channels? It certainly does. And, under God, he has the power to make them. He can make them, it is true, only by indirection. But he has the assurance, both of nature and of revelation, that if, in the determinations of his will, accompanied by appropriate activities, he obeys the higher law, at first with difficulty and pain, the Spirit, working, as it were, in the wake of those efforts, will conduct them to the highest constructive results. I am not supposing that primitive man understands all this any more than a little child understands it. In each case a command is recognized, and a strong resistance is experienced.

But now we must carefully discriminate between this natural reluctance, this opposition of the old nature, and sin. Sin cannot be a physical product. should we adopt the evolution of Professor Huxley

[1] *Science of Ethics*, Leslie Stephen.

and of Mr. Spencer, which sees in man's conviction of responsibility an illusion, then, indeed, sin itself would be an illusion. But to the evolution that recognizes moral free agency as a real factor, sin also is a reality. It enters the world for the first time when a conscious free agent *chooses to realize self on a lower plane than that indicated by conscience.* It enters, not in its fully developed positive form, but as a refusal rather than a determination, a rejection of the higher rather than a deliberate choice of the lower. But its more positive form is anon brought out by the insistence of conscience, which has come to stay and fight out the battle to the end. This insistence produces annoyance, opposition, and, in some, a willful determination to persist in the chosen way of disobedience. Its language is: "I do not want to rise to higher things; I *will* not rise; I *will* live my life as it pleases me to live it, without regard to the commands or threatenings of this intruder."

But the great majority of men assume no such position. Some assent, and mean to follow, and, in a halting way, *do* follow, the voice of the guide that ever strives to draw them higher. Their lives are not all obedience, nor all disobedience, but their abiding *choice* is to obey. There are others, not a small number, who settle down into a middle course that gives a measure of peace. Man has the power not only to resist conscience, but the far more dangerous power of evading it. He who is engaged in a recognized, embittered warfare with the Spirit of God in his soul is in a less perilous way than he who has succeeded in paralyzing that side of his nature

which is sensitive to the motions of the Spirit. Ingenious as men have always been in discovering narcotics for the body, their skill in this direction is probably more than matched by the variety and potency of their inventions for deadening the nerves of the soul. Some of these are natural, like simple neglect; some are highly artificial, like formal and soulless religions. Some are gross, like sensual pleasures; others are of the utmost refinement, — garments of self-righteousness, of delicate texture. But the result is the same in all cases. Sin, except on occasions, instead of being a painful, disturbing element, is like a dull, inert parasite that vegetates in the soul, appropriating its nourishment, battening on its life, but making little stir.

We may now turn to the idea of salvation, the power that makes for the rescue and realization of the higher life, which sin tends to destroy. Must we, to find this element at work, leave the first period behind us? Was there no salvation before Christ died? Let us see what we mean by the word. If we understand by it a complete triumph over evil, in the full realization of man's higher possibilities, we must say that neither in the one period nor in the other is there salvation on earth. But if we apprehend it as a process that moves toward its fulfillment, in accordance with the laws that govern the growth of other things, we may discern its efficiency from the beginning to the end.

Taking the largest view of it, we may see that elements making for salvation were present at every step of the way. The knowledge of good and evil,

though it came through transgression, was the beginning of salvation. It was the first step toward the rescue of the spiritual possibilities of the soul. Whether these possibilities might have been developed otherwise it is idle to inquire. That they were developed in the race through sin is matter of sacred history, and the experience of the individual indorses the truth of the record. If this involves us in the assumption that good may somehow grow from a root of evil, or be inextricably associated with evil, we are not thereby brought into conflict with the actual world of our experience, nor with the scheme of Christianity as set forth in the Scriptures. We are only caught in the metaphysical difficulty of being unable to make the joints of our fragmentary abstractions fit into each other. We are confused in one of those illusory cross-roads of thought which, according to our calculations, ought to connect the main lines of our reasoning, but which experimental reason has proved to be labyrinthine.

But even if we take a more restricted view, and search for the *fruits* of the process, we shall not seek in vain. From "righteous Abel" on through all the dark periods of the world's history, the creative work of salvation has unmistakably declared itself. We ought not, indeed, to expect to find the fully developed Christian type of man in pre-Christian centuries, but we do find the disposition that, under favorable circumstances, develops into Christianity. The fruits of the Spirit are not identical in all ages. The higher law of Christ has brought into view, and highly honored, virtues that were

hardly recognized under the old dispensation. Long-suffering and meekness were, so to speak, nebula in the field of man's moral vision, until the powerful lens of the great Teacher was turned upon them. But love, joy, peace, kindness, goodness, faithfulness, temperance, fortitude, were recognized and cultivated by some, in obedience to the leadings of the Spirit.

That all these elements of salvation were at work in some of the descendants of Abraham, no one who has read the Old Testament can for a moment doubt. And wherever the religious history of other nations is read with a sympathetic human interest, it can hardly fail to produce the conviction that God is no respecter of persons, but that in every nation He has had those who have not bowed the knee to Baal, but, according to their enlightenment, have feared Him, and in some measure worked righteousness.[1] "I like life," says Mencius, "and I also like righteousness; but if the two are not to be retained together, I let go life and hold to righteousness." The ethical systems wrought out by generations of earnest men, under the different civilizations, are of themselves evidence that during all those centuries of relative darkness the Spirit of God was working with men, disturbing, rebuking, alarming them, because of their sins, encouraging and sustaining them in their righteous efforts, and ever pointing them to a higher ideal for their attainment.

[1] In such passages as John x. 16, and Matt. xxv. 37–41, Christ seems to refer distinctly to this class.

But, in this view, what becomes of the lofty claims of Christianity? Did it bring nothing new into the world?

We are confronted here with a question of the very same order as that which meets us at the emergence of man from a creature that is not man. It is frequently put in this form: Have we here a difference of *kind* or only a difference of *degree?* A more unsatisfactory question could hardly be framed, for the reason that there is no test by which to settle what constitutes a difference of kind. When simple elements unite to form a chemical compound, there results, we say, a difference of kind; but as this has been brought about by differences of condition and proportion, it may be objected that the compound is not really, but only apparently, a new substance. The true question for us to ask about Christianity is this: Does its newness consist in the presence of an absolutely new, simple element in the world, or is it a new condition of things, a development of higher functions brought about by differences of relation and proportion? To answer this, we must compare both the facts and the order of the facts under Christianity with those of the antecedent period.

Let us begin at the beginning. Man entered the realm of morals through the gate of the knowledge of good and evil. By this knowledge he was made to partake of the divine nature, not simply potentially, but actually. Now, turning to the later stage of moral creation, what do we find to be its first step or prime condition? The very same, — moral

enlightenment. Man is not wrenched out of the process which was begun when the eyes of the race were opened; but he is carried on to a higher stage of the same process. He is brought once more to the tree of the knowledge of good and evil. When the aged Simeon, filled with the Holy Ghost, took the infant Jesus in his arms, he was inspired to prophesy, not simply "a light to lighten the Gentiles and the glory of thy people Israel," but, further, "Behold, this child is set for the *fall* and rising again of many in Israel." Now it is not the *word* "fall" that I wish to emphasize in calling attention to this prophecy. The word stands for a fact; and this fact has been realized, not only in the experience of Israel, but in the consciousness of Christendom, with a fullness which justifies us in designating the *entrance* of Christianity into the world as a *fall*.

Like the first great ethical event of the race, it was preëminently and distinctively a great moral illumination. Like that also, it was a moral *condemnation* of the profoundest significance. It was an intensified repetition of the primal revelation of man to himself as a moral being. It was brought about by the same agencies. The revealer is the same in both. Conscience, the light that lightens every man that cometh into the world, is also the eternal *Logos* that, in the form of man, preached the Sermon on the Mount. Like that earlier revelation, it came not all at once, nor independently of man's coöperation. It came first as a degree of light communicated from without; but this was de-

veloped into a deep and abiding race-consciousness only when it had been acted upon. It began with the preaching of John. His baptism unto repentance was the symbolical representation and prophecy of that subsequent destructive baptism of the Holy Ghost which is likened to fire, a baptism of moral light, that by convincing men of righteousness and sin cast them into the depths of moral despair.

The first great wave of this illumination comes through Christ's teachings. In the Sermon on the Mount he took the law of Moses and spiritualized its letter to such a degree as to make righteousness appear impossible. By carrying the discrimination of good and evil into the motives and dispositions of the heart, he disclosed to all those who could understand the language of the Spirit their absolute and hopeless unrighteousness. The Apostle Paul vividly describes the depth of the fall which this illumination of the law was fitted to bring about in a man who had the moral discernment and honesty to receive it. "I had not known sin, but by the law." "I was alive without the law once; but when the commandment came sin revived and I died. And the commandment which was ordained to life I found to be unto death." But to only a few select souls could this lighting up of the law of Moses carry conviction and rouse such a knowledge of righteousness and sin as should prepare and make straight the way of the Lord in Christian salvation.

No prohibition could be made to carry the mean-

ing of that positive injunction, "Love one another *as I have loved you.*" This brief commandment makes the whole life of Christ a standing condemnation of every man who accepts Him as the truth. To love men *as Christ loved them* sets before every one of his followers a hopeless standard. Here is light indeed, not of a saving but of a destructive character. To every conscientious soul it lays bare its selfishness in a way that kills. But even this is not the extent of the Christian fall. The teaching and the life may stir a response and produce conviction in men who have been in the habit of responding to the influences of the Spirit and of rendering an imperfect obedience to it. But the inefficacy of such knowledge in the case of the vast majority of mankind was clearly discerned and pointed out by our Saviour. "This people's heart is waxed gross, and their ears are dull of hearing, and their eyes they have closed." There was a far more powerful instrument of conviction in reserve.

As in the first fall, so in the second, the deep abiding impression of the nature of sin was to be developed and stamped upon the consciousness of the race by its own act. The crime of the first disobedience was to be reënacted in the tragedy of the Crucifixion. "This is the condemnation that light is come into the world, and men loved darkness rather than light, because their deeds were evil." The holiness of God, that at first had feebly declared itself in conscience, is now declared fully and clearly in the form of a perfect humanity, and the result is an outbreak of bitter hostility. The

most potent forces of the physical world may slumber for ages in absolute inactivity and give no sign of their presence till brought into contact with some element that sets them free. It is the same with moral forces. "The world cannot hate you, but me it hateth because I testify of it that the works thereof are evil." Perfect righteousness coming into a world of sin demonstrated the nature of sin; and by so doing it provided, at the same time, the most powerful organ of conviction and the most expressive medium of confession.

Let us now see if we can trace the relations which this Christian fall sustained to the previous and subsequent development of the race. Can we discover in this morally destructive work a necessary stage of the great world process? I think we may safely say that the continuation of that process in the line of moral and spiritual elevation, independently of such an experience, is inconceivable. Every advance in the perception of righteousness involves the perception of deficiency. The whole world, organic and inorganic, moves by attractions and repulsions. In sensible organisms, all self-initiated progress is dependent upon an impelling power that may, in a general way, be called *dissatisfaction.*

This is often the incentive and the spring of effort even in the absence of a well-defined object of desire. It is this that spurs flagging energies by making the pain of endurance seem greater than the pain of conflict. Response to environment, adjustment of disturbed relations, is the expression of this principle in the lower sphere. In a higher we call it a

quickening of the instinct of self-preservation. The new enlightenment that pours in upon man with the Christian fall radically alters the relations which he sustains to an ideal self, to society, to God. It has thrown his whole existence, so to speak, out of joint. He must make a supreme effort to rise to something higher, or morally perish; for besides the pain of the present there is a sense of peril, the shadow of an impending calamity and the loss of everything.

The recognition of this principle throws a flood of light upon our inquiry. But it does not fully answer it. A sense of present or impending evil cannot act as a stimulus except it be so proportioned to the mind as not to destroy hope. Otherwise it is simply paralyzing and despair-producing; and this, as we have seen, is the effect of the Christian fall. How shall we account for this excess, as it would seem, of moral illumination?

To answer this we must advance to a consideration of the distinctive positive elements of Christianity. The Christian fall is, in the first place, adjusted to the proclamation of a full and free forgiveness of sins, — a forgiveness of sins in the case of men who have still a career of moral effort before them. Therefore, the integrity of the principle hitherto followed in the education of the race, that of making men make themselves, requires that a full assurance of the forgiveness of sins be counterbalanced by an equally full recognition of the perfect and unchangeable holiness of God. The object to be attained by salvation is *moral character*. This can be produced only in and through voluntary choice. But the true

choice that constitutes and produces the ideal character is conditioned upon the perception of a true ideal as the *object* of choice. But the ideals of men are not fixed; they are forever on the move, for better or for worse. Inborn disposition, indulged inclination, habitual attention, help to make them what they are; and more or less consciously men exercise a selective control over the elements of their moral representations so as to make their ideals conform to lower schemes of excellence, not too remote or too difficult. There can be no assured progress, therefore, unless there be some standard which shall draw the ever-forming ideal upward.

But full and free forgiveness of sins, while it relieves men of the burdens of the past, is, as regards the future, relaxing and ideal-obscuring. To prevent its acting in this mischievous way, therefore, it is necessary that it should be inseparably joined with an impression of the true, the remote, the infinitely difficult ideal of God. This has been accomplished by the life and death of Christ. So that he who receives Christ in his teachings, in his life of self-denying ministry, in the fullness of his divine antithesis to the human life that surrounded Him, and who recognizes in the hostility that slew Him the manifestation of our common sinful nature, realizes and expresses all that which men incoherently and with a half-consciousness expressed under the earlier dispensation by sin-offerings and purifications.

One who thus receives Christ lives in the light. He cannot confuse God's ideal with his own. He cannot bring the righteousness of God down to his

own level. He can receive forgiveness at the hands of Christ only as the inseparable adjunct of the command, "Be ye perfect, even as your Father which is in heaven is perfect." No deliverance from the penalties of sin can satisfy him. He must rise to that higher form of salvation which rescues from sin itself. This, as it seems to me, satisfactorily explains why an apparently excessive and despair-producing degree of moral enlightenment was necessary.

But the problem is not yet solved. The mere fact of the necessity of this apparent excess of moral light does nothing to relieve our difficulty with regard to its destructive nature. The forgiveness of sins that are past does not furnish the power to overcome in the future. The light that makes forgiveness possible leaves the forgiven soul more discouraged than ever in view of the higher morality revealed to it. We are brought face to face with the question of the Apostle Paul, "Did then that which was good become death unto me?" His answer is, "I thank God through Jesus Christ our Lord. . . . For the law of the Spirit of *life* in Christ Jesus hath made me free from the law of sin and *death*." In other words, the excess of moral light is adjusted not simply to the forgiveness of sins, but to something that gives life and hope in even greater volume than it gives despair, that is, to the knowledge of the constructive work of Christianity, — "*the law of the Spirit of Life*."

By this man is assured that he is not expected to conquer in his own strength, but that the Spirit shall work within him; and that faithful striving will,

through God, result in a triumphant ending, no matter how great the discouragements of the long conflict. Nor is this all. In Christianity there is developed a higher element than self-realization. The end of religion is the realization of one's own life in that of another, — the conscious surrender and uniting of the soul which has lived in conscious separation. The power that works with us is not an unconscious energy; it is a personality that links itself with ours, — that pours its life-blood into our veins as by a spiritual transfusion; a personality whose distinguishing characteristic is love, — a love that is at the same time the source and the end of our being. From Him in whom all fullness dwells our lives have flowed, and in Him all our desires, aspirations, and highest emotions shall find an ever widening and deepening satisfaction. This is the outcome of the travail of the human soul. Toward this consummation the whole history of man and every adjustment in it has pointed. For this the tree of the knowledge of good and evil was planted in the garden. For this man was made to pass through the deep spiritual prostration of the Christian fall.

Let us scrutinize this latter part of the history that we may satisfy ourselves as to the correctness of the hypothesis that salvation is the rescue not simply of man, but also of an antecedent process, from miscarriage and failure. Are we safe in affirming that every element in it is the continuation or repetition on a higher scale of a factor that was previously energizing in the world? May we describe Christianity as a vast extension and deepening of all the

higher ranges of human consciousness, by means of which the inpouring of divine influence, in greatly increased volume, was made possible? First, as to the forgiveness of sins. It is unnecessary to dwell upon this, because Scripture itself so clearly points out the fact that when man approaches God through Christ he experiences and expresses that which his fathers feebly felt and imperfectly expressed through sacrifices. By this higher medium of expression is secured not simply a concentration of thought on the essential meaning of sacrifice, but there is at the same time the clearing away of the relatively low conceptions that obscured even while they revealed God to the more ancient worshiper.

But what shall we say of the constructive work of the Spirit? When Christ says, "Except a man be born again, he cannot see the kingdom of God," is He speaking of the continuation of a process? When He promises that He will send the Spirit, is He thinking of an influence that is already at work? Or when Paul affirms that "if any man be in Christ he is a new creature: old things are passed away; behold, all things are become new," does he at the same time conceive of the Christian life as the moral life raised to a higher level of thought and feeling?

I believe the whole current of thought in the Bible, and the whole record of the world as we know it, compels us to answer these questions in the affirmative. The letter killeth, the spirit maketh alive. Each one of these expressions is most rationally interpreted when we consider it as having a relative rather than an absolute meaning. The

importance of the new stage of enlightenment and development on which man has entered cannot be overestimated or overstated. To impress that importance upon us the very strongest figures which language affords are used. But let us remember that our Saviour was careful to represent his work as a continuity. "I am come not to destroy, but to fulfill." "My Father worketh hitherto, and I work; if I do not the works of my Father, believe me not." The Spirit that was promised, and that gave external evidence of its presence on the day of Pentecost, is everywhere identified with the Spirit of the Old Testament. And Paul, who uses such strong antithesis to express the transcendent significance of what Christ has achieved, does not fail to recognize a vital continuity between a life of moral endeavor without Christ and the higher life of realization in Christ.

Before the light of Christianity dawned, while all the nations were living under the law, men were divided into two classes: First, those who delighted in the law of God after the inward man and made partially successful efforts to obey it; and, second, those who did not like to retain God in their knowledge, and were given over to a reprobate mind. Judged by the law, both these classes are concluded under sin and, by the revelation of the Christian standard, both, in so far as they receive it, are morally slain. They become morally *dead* in trespasses and sins, and helpless as regards the future. But for those who belong to the former class the new birth is not the transformation of the will, for to will is already present, but how to perform that which is

good they find not. It is for them the implantation of a new principle of action through the avenue of the mind. They are begotten of God by the word of truth. This truth is received by the reason, which reacts upon it till the whole aspect of the world is changed.

The face of God is changed. He who has manifested himself as distant in his holiness, as exacting in his requirements, shows himself in Christ as the sustainer and the Saviour of every one who wills to do his will. Not that He has changed his character, or his purpose concerning us, or his method of working. He has only taken away the dimness from our eyes. It is still his plan that we should work out our own salvation. He casts us down in our own esteem, but He does not treat with contempt the children whom He has made in his own image. He does not say: "Stand aside; your efforts are useless, and worse than useless; the ages past have demonstrated this. You are an utter and total failure, therefore everything is changed. You may yet be saved, but only by resigning yourself to the Spirit, who will do everything for you."

On the contrary, the same God who, through his prophets, spoke so tenderly to his ancient people as a nation, speaks now with the same consideration to every individual whose soul is morally cast down within him. "A bruised reed shall he not break, and smoking flax shall he not quench." "Fear thou not," He said to Israel, "for I am with thee; be not dismayed, for I am thy God. I will strengthen thee, yea, I will help thee, yea, I will uphold thee with the

right hand of my righteousness." And to us He says, "Without me *ye* can do nothing," but "my grace is sufficient for thee." And the true-hearted, courageous response of the soul is given in the words of the Apostle Paul: "I can do all things through Christ which strengtheneth me."

The revelation is no longer a savor of death unto death, but a savor of life unto life. The Christian fall has been changed into a rising again. The cross, the emblem of our deepest shame and condemnation, is transformed into the sign of victory. It is the way to the resurrection. "I am come that they might have life, and that they might have it more abundantly." It is no part of the Christian revelation to permanently destroy belief in the usefulness of human efforts or in the efficiency of our God-given faculties, but to restore confidence in these, and infuse into struggling souls the sustaining consciousness that their labors are not in vain in the Lord. There is to be a conquest and a triumph, — not simply the triumph of God, but *our* triumph in and through God. "As many as received him, to them gave he *power* to become the sons of God."

Is there, then, no difference between the old dispensation and the new? If the Spirit has always worked with man, if human efforts for good have always been supplemented by divine aid, what great thing has Christianity done for man? It has done this: it has made the individual soul a conscious worker with God. It is true that even while men were striving to reach the lower standard it was their privilege to believe that God would assist them.

"They that wait upon the Lord shall renew their strength; they shall mount up with wings as eagles; they shall run, and not be weary; they shall walk, and not faint." But in view of the higher standard revealed in Christ, the absolute insufficiency of the individual in separation is brought out with a fullness unknown to the Old Testament. This is the essential distinction, the very life-principle of Christianity. It is not simply the means to an end. It is the means and the end also. By this necessity the Word of God, the quickening principle, penetrates through the intellect to the heart and generates that principle of personal love which is not only a power productive of new life, but which is the new life itself. In so far as this is developed there is a change not simply of the intellectual view, but of the deepest springs of desire. The soul lives no more unto itself, even its ideal self, but unto Him who gave his own life for it.

This consummation is indeed a something unique in the world. But it is not in its essence new. It is the sublimation, the apotheosis of the truest affections evolved in human relationships; and it is through these as the medium of expression that the union of the divine and human is made intelligible to us. God's love to us is that of a father, our love to Him is that of a son. The union of Christ and the believer is that of the most perfect friendship. The evidence of our having passed from death unto life is our love of the brethren.

I have said, in passing, that this rendering of salvation is indorsed not only by Scripture but by the

experience of every Christian. The first clear revelation of the knowledge of good and evil comes to every individual soul through transgression. The light and moral humiliation of Christianity do their work at a later stage. Nor does this exhaust the analogy. The whole process is repeated again and again. We never outgrow the tree of the knowledge of good and evil. The frequent appropriation of its stimulating fruit is the condition of spiritual growth. The Christian fall is experienced, not indeed every time we are guilty of transgression, but every time our eyes are opened to hitherto disregarded imperfections and to the existence of a higher moral standard; and our Christian life is made fuller and deeper every time we are impelled by our sense of insufficiency to draw more largely on the strength of the Saviour of our spirits. This is the divine method from beginning to end.

APPENDIX A.

THE EVOLUTION OF CONSCIENCE.

MORALS are natural. The moral sense is natural. It has originated from the same source as our other instincts, and it owes its authority to the same power. How can we say otherwise? With regard to all the normal impulses of our nature which originate with a power not ourselves, and which are the outcome of an intelligence not our own, one of two things must be true. Either these impulses are from God, or they are not from Him. If they are from Him, then what we call the moral sense, or the moral instinct, is not degraded by being associated with them. On the contrary, to associate conscience with these other promptings of our nature is to place its authority upon the strongest and most unassailable basis.

Why, then, it may be worth while to ask, is it that theistic writers have so often considered it necessary to take the ground that morals are outside nature? I would suggest, first, that it is because of a time-honored and radical misconception as to the methods of nature's working: a conception which ignores the fact that conflict is the condition of existence; that antagonism is life, that the cessation of antagonism is death. Nature is thought of as working from without upon, and through, passive agents. It is a flowing stream that bears us on its current. Whatever, therefore, involves struggle, or is acquired as the result of struggle, is unnatural; and morality, which never is the result of floating with the current,

but is in all cases the fruit of overcoming, seems, above all things, to be the contradiction of nature.

But when it comes to be recognized that the normal state of all living things is a state of antagonism, that there is for everything a better possible condition that can be realized only through effort, the inadequacy of this idea of nature is manifest, and a broader conception begins to supplant it. Nature is no longer a stream. It is a great ocean that supports us, and of which we also are a part; an ocean with many currents forcing their way against and through it, while at the same time they are of it. Conduct, in the light of this conception, is natural, in harmony with the highest purposes of nature, even when conflict is at its sharpest. Not to accept the struggle is to be unnatural. To be natural is so to act as to continue in the line of true development.

There is, however, another fancied reason for regarding morality as the antithesis of nature. It seems to have been suggested by the fear that morals are in danger of being identified with physical forces unless an absolute independence of origin be claimed for them; and the argument in support of it is based upon the assumption that morality, as exhibited in man, is not only higher than anything else in nature, but is the absolute contradiction of the processes of nature.

Dr. Martineau's statement of this argument is a striking one. After developing, in a passage of great beauty, the thought that the very soul of moral character is self-forgetful love, he asks, "Is, then, this religion of self-sacrifice the counterpart of the behavior of the objective world? Is the same principle to be found dominating on that great scale? Far from it. There, we are informed, the only rule is self-assertion: the all-determining law is relentless competition for superior advantage, — the con-

dition of obeying which is that you are to forego nothing, and never to miss an opportunity of pushing a rival over, and seizing the prey before he is on his feet again. We look without, and see the irresistible fact of selfish scramble; we look within, and find the irresistible faith of unselfish abnegation. So here, again, morals are unnatural, and nature is unmoral."[1] Now is this a true statement? or is it only a generalization arrived at by overlooking one half the evidence which nature lays before us? The author of those frequently quoted lines, —

> "Who trusted God was love indeed,
> And love, creation's final law, —
> Though nature, red in tooth and claw
> With ravin, shrieked against his creed," —

anon reproaches himself for singing "so wildly." And I must believe that Dr. Martineau has, ere this, suffered pangs of remorse in view of a representation of our foster-mother so shamefully one-sided and unfair. Selfish scramble is no more fully illustrated in unconscious nature than the opposite principle of unselfish surrender. Egoism gives place to altruism in the realm of the not-yet-moral as well as in that of developed morality. I will not dwell upon the striking instances of fidelity to communal as distinguished from individual interests, exhibited on a great scale by the lower animals. I will not stop to consider all that self-sacrifice that is developed in connection with maternity, but will strike lower down in nature, below intelligent life, below sentient life, and draw my analogy from the vegetable world.

What do we find as regards the giving away of self in the history of a tree? This history divides itself into two epochs, each of which is dominated by a process seemingly the reverse of that which prevails in the other. In

[1] *Materialism, Theology, and Religion*, p. 57.

the first period self-assertion *is* the rule. The struggle for existence, at the expense of every surrounding thing that can be of use to the tree, is the apparent end and exhaustive expression of its activities. It robs the soil, it contests the possession of territory with other forms of vegetable life. It overshadows and destroys many weaker relations on its way to prosperity. Its roots burrow far and near, contending with other roots for every morsel of nutriment. It is, in fact, a greedy, insatiable thing that gets all it can, but never parts with any of its strength. But when this has been going on for years, — for decades, perhaps, — a most wonderful thing takes place. A flower makes its appearance.

Were our experience limited to the growth of a single tree, the advent of this beautiful and marvelously adapted organism would be a thing utterly strange and unaccountable in connection with the tree that has hitherto borne nothing but leaves. But more wonderful than the miracle of the flower is the miracle of the process which it ushers in, — a process the reverse of that which has hitherto characterized the tree. That which has been accumulated is now freely given up, and the energies of the plant are henceforth largely diverted into the production of that which is soon to be separated and altogether estranged from the producer. The whole process of flowering and fruit or seed bearing is of the nature of a free giving away of life substance in such a way that no return can ever be received. With many plants it is the giving up of *all* the life substance. They perish when the process is finished. In every case it is exhausting, and growth is interrupted by it.

Am I, then, arguing that trees are moral? Not at all. They are, as Dr. Martineau says, unmoral. But the phenomena to which I have called attention prove that

morals are not the contradiction of natural processes. It is but an analogy. But it is one which Christ has sanctioned by repeated use for the illustration of the fact that spiritual life proceeds by a change of function from life that is not spiritual. The man who continues to live in his lower nature is a tree that bears nothing but *leaves*. The invariable characteristic and certain evidence of spiritual life is *fruit-bearing*. The nation that has received the greatest blessings, but has failed to realize the plan of its existence, is thrust aside; and the kingdom of God, taken from it, is given to a nation bringing forth the *fruits* thereof. In other passages, too numerous to mention, the same metaphor is used.

Now this process of fruit-bearing supervening upon a process of an opposite tendency, which has prepared the way for it, is *evolution*. Let us, therefore, follow the analogy a little further, and see what light it is capable of throwing upon the proposition that morality is evolved from, or superinduced upon, that which is unmoral. Morality, as we know it, came into the world in connection with man. If we entertain the hypothesis that man is derived from the lower animals by a process of differentiation, we may entertain also the hypothesis that his moral nature is derived, through differentiation, from that which is unmoral; and as I have elsewhere maintained that the former idea involves nothing which is at variance with a pure theology, so I shall now endeavor to show that the latter idea is in harmony with the loftiest conceptions of the origin and authority of conscience, — that it detracts nothing from the sacredness with which we have been accustomed to invest it, but, on the contrary, adds to our confidence in its dictates.

Whenever we succeed in coördinating with the great body of our related ideas other ideas which have hitherto

seemed separate and singular, we gain a sense of restfulness and certainty about these which nothing else can give. It is like classifying a physical phenomenon which has before seemed out of relation or even opposed to other facts. I will, therefore, ask the reader to follow this analogy further, in the hope that it will help to establish the reasonableness of the above position, and the unreasonableness of the assumption, so often made, that to affirm the *evolution* of the moral sense is to deny its reality.

A point in the analogy to which I would call special attention is this: *The blossom of a tree is evolved from that which, but for some mysterious differentiating power, would have been a leaf or cluster of leaves.* The blossom is not evolved *from* the leaf, but, by virtue of some process which we cannot begin to trace, it has escaped being a leaf and has become this thing which not only is marvelous in itself, but which is the first indication of what seems to be a revolution in the nature of the tree. In other words, when a certain critical stage in the evolution of the plant has been reached, and its vital forces are to be directed into new channels for the attainment of higher results, this change is accomplished, not by the introduction of absolutely new organs, but by the adaptation of old ones in such a manner that new functions can be performed by them. But when they have been thus adapted we do not fail to recognize them as essentially different things. The fact that they have sprung from the same rudiments as leaves — and that there is sometimes, by a retrograde metamorphosis, such a reversion that leaves appear where we have learned to expect blossoms or parts of blossoms — does not obliterate or tend to obliterate the distinction between leaves, sepals, petals, stamens, and pistils. The flower as a whole,

and each part of the flower, has its own distinct characteristics, though all may be referred to a common type and traced back to a common origin.

Now, scientific evolution as applied to the genesis of species is, fundamentally, the expansion of the idea of creation made known to us in this and in kindred processes of the animal world. And it is of the utmost importance that we carefully distinguish between this and the numerous hypotheses framed and to be framed for the explanation of it. When we assent to the proposition that one thing is evolved from another, we do not necessarily commit ourselves to any of these hypotheses, none of which pretend to offer more than a partial explanation of the great fact. We commit ourselves only to the belief that one thing has proceeded from another by a process of differentiation. The word "evolution" — or, more properly, *epigenesis* — does not imply that the whole contents of the thing said to be evolved previously existed, in the antecedents; it affirms, on the contrary, that there not only *may* be but *must* be something in the result that did not exist in the antecedents.

The necessity for putting a sharp emphasis on this simple idea of evolution has been illustrated by some of the most eminent modern writers on ethics. It is only through failing to distinguish between essential evolution and hypothetical explanations of it that so acute a philosopher as the late Professor T. H. Green of Oxford, while making a most satisfactory statement of the existence of an evolutionary relationship between the higher and the lower instincts, could be able at the same time to assert the impossibility of applying the word *evolution* to this relationship. His statement of evolution and his denial of it are embraced in the following sentence: "We may take it, then, as an ultimate fact of human history — a fact

without which there would not be such a history, *and which is not in turn deducible from any other history* — that out of sympathies of animal origin, through their presence in a self-conscious soul, there arise interests as of a person in persons. Out of processes common to man's life with the life of animals, there arise for man, as there do not apparently arise for animals,

> 'Relations dear and all the charities
> Of father, son, and brother;'

and of those relations and charities, self-consciousness on the part of all concerned in them is the condition." [1] The words which I have italicized have explicit reference to the position of the author, — that the social interest, as we know it, however dependent upon feelings of animal origin, cannot be said to have been evolved from them. The reason given is significant. The higher cannot have been evolved from the lower, because the lower "must have taken a new character" before they could issue in the higher. The evolution here denied, therefore, is an evolution without differentiation. But modern science knows nothing of such a theory.

Probably much of the difficulty presented by the idea of evolution as related to morals would be removed if, instead of saying that one thing is evolved *from* another, it should be said "evolved *in connection with*." As we have already seen, it is not strictly true that blossoms are evolved from leaves. They are evolved from that something, from those elements, which, undifferentiated, would have been leaves. So if we say, with regard to the moral sense, that it is evolved *in connection with*, or that, by a process of evolution, it is *superinduced upon*, the lower instincts, we shall keep closer to our analogy and avoid misconception.

[1] *Prolegomena to Ethics.*

It is rarely, if ever, safe to assert that one known product is directly evolved from another known product of a different kind; for our powers of analysis are not equal to ascertaining with absolute certainty what the immediate antecedent in any given case may be. What appears to be so may belong to a collateral line of descent. In some cases we are able to trace relationships so perfectly that little doubt of direct descent or derivation is left on our minds. But no one can rationally entertain the doctrine of evolution unless he has a good degree of patience in view of the unknown. At many points in the series, what we see is apparently the introduction of a radically new factor; nor can it be *proved* that it is not exactly what it seems. But the processes with which we are acquainted, and which seem to point to a uniform method running through all nature, lead us to suspect that this view of the case is not strictly true; but that what appears to us as absolutely new has been to some extent and in some way derived by the modification of elements already in existence. There is a vast difference between this way of holding the doctrine and that which assumes to explain everything.

The work of tracing a connection between things hitherto deemed unconnected is to some minds a most intoxicating one, and from this intoxication has sprung great scandal to the word *evolution*. The conceit of accounting for the existence of everything by the few factors known to us is, on the face of it, preposterous; but that has not prevented such a conceit from being entertained, or from embodying itself in elaborate schemes. It is not strange that such schemes can be constructed. If there is any truth in evolution the whole world is related; and factors that are not closely connected have still so much in common that they may be made to appear as antece-

dent and consequent, if only one is content to notice the similarities and disregard everything else. But the inevitable result of this is the distortion and falsification of most of the elements dealt with. Each link in the series is made to appear something different from what it really is, in order to accommodate it to that which goes before and to that which follows. In every case it is the more highly evolved product that suffers most, since the appearance of sufficiency can be secured only by emptying this of its most distinctive characteristics. This method and these results have been illustrated nowhere more fully than in the attempts which have been made to give a complete explanation of the genesis of the moral sense.

Conscience, we are told, has been evolved from experiences of pain and pleasure. Now, if a botanist should attempt to demonstrate that blossoms are evolved from leaves, we should have a parallel to this. Experiences of pain and pleasure of a peculiar kind are very closely connected with conscience. They are frequently the results of right and wrong action, and they sometimes coöperate with conscience to secure obedience to its commands. If, therefore, the mind can be made to concentrate itself upon the fact of this relationship, it may be seduced into believing that pleasurable and painful experiences have been transformed into the ideas of right and wrong, and that the feelings of *ought* and *ought not* have grown out of the compulsions that nature and society have brought to bear upon us when we have transgressed their laws.

But the results reached by this method are certainly not indorsed by our daily consciousness. They are indeed the negation of experience, — the flat contradiction of our deepest convictions. It is a matter of simple knowledge to every man who has acted from conscientious motives that the calculation of pain and pleasure has been no part of his conscientiousness.

Who has not, in reflecting upon the springs of conduct within himself, been forced to the confession of what are called *mixed* motives? And who at such times has failed to recognize that this mixture was the association of elements that were of an intrinsically opposite nature? Selfishness may lead a man to trifle with his convictions, and to wink hard at the substitution of interested motives for those which spring from a sense of duty. But when he looks himself squarely in the face he knows, as surely as he knows anything, that in so far as he is actuated by the calculation of personal pleasures and pains he is not distinctively conscientious; and that in so far as he is, over and above all else, conscientious, he is not actuated by a calculation of pleasures and pains as ends.

Nor does the fact that immediate pleasures are sacrificed for remote, or possibly more enduring ones, bring us any nearer to the idea of conscience. A man may regulate his whole life with a view to remote happiness, and yet not be actuated in the least by a sense of duty. He may restrain his passions, deny himself rest and amusement, undertake and persevere in uncongenial and wearing labor, and yet have no spark of conscientious motive in him. If the end which moves him is a purely selfish one, no amount of self-denial endured for its attainment, no degree of remoteness and no length of duration in the happiness sought, can make his life moral.

In comparing, therefore, the conscience which we thought we had evolved with the conscience of every-day life, we find that the former is devoid of all the distinctive characteristics of the latter. From the desire of avoiding pain and securing pleasure, we have not been able to evolve anything approaching a moral motive. Vary the pleasure or pain as we will, the motive is always the same, — the desire of pleasure, — and we have not moved a step. The

unavoidable deduction from this is either that this process is false, or that the conception of conscience, which is the uniform product of human experience, is false. If the process be true, then our notion of conscience must be untrue, and there is no such thing as a moral difference in actions. We cannot escape this by saying, as Mr. Herbert Spencer does, that, having lost the knowledge of this derivation of conscience, it stands for us as something different and higher than the recognized desire for pleasure. Hitherto, whatever may have been its origin, the moral sense has been a powerful factor in the lives of men, because they have believed in its distinctive character and its title to supreme authority. But to have found out that it is nothing but a somewhat obscure form of selfishness is to abolish it.

But if, revolted by this conclusion, we try to retrace the path by which we have been led, we may discover that we are caught in a labyrinth of logic from which it is difficult to find the way out. Every turning brings us back, after a little, to the same point. Happiness of some kind, near or remote, can always be postulated as the outcome of obedience to conscience; and, if happiness is the product, how can we escape the implication that happiness was the end and motive? There is but one way out of this, that is, the way by which we came in, namely, assent to the assumption that anticipations of pain or pleasure are the *only* motives to action. Let us once recognize the fact that our primary instinctive impulses to action are altogether independent of and antecedent to experiences of pain and pleasure, and we are free.

Genetically considered, pains and pleasures are the offspring of our earliest impulses to action. Compliance with an instinct, like that which causes an animal to seek its food, may be followed by pleasure; and the remem-

brance of it, in a higher animal, may be an additional incentive to repeat the experience. The same instinct, thwarted, may be followed by uneasiness and pain; and this again is an additional motive to compliance. But neither pleasures nor pains were the original springs of action. They are the rewards and the reprimands of nature. It is indeed true that pleasure may be made an end in itself. But when it is so made we have evolution downward, not evolution upward. The resulting disorder declares plainly that such an arrangement is, for a moral being, *unnatural.*

Is it, then, possible to class conscience as an instinct? Let us see what is involved in the use of this word. Do we not mean by instinctive action an action to which we are impelled independently of our reason? And is not an instinct, therefore, an impulse that *appears* to come to us from an external source? If this is correct, it is obvious that what we understand by conscience is not fully described by the word "instinct," since there is in it a rational element that we can trace. We can clearly discern many of the influences which have combined to make our consciences what they are. Many of its decisions, which cannot be traced to our own reason, can be seen to have originated in the reason of those who have gone before us. Even while we act instinctively from its guidance, we may analyze it. The question therefore arises, can that which may be analyzed and traced to human reason be called an instinct? At the risk of wearying the reader, I must pause long enough on this point to make sure of the recognition of two kinds of instinct which are often confused.

We begin our lives with instinct; then in many directions we supersede instinct with reason; then in some of these same directions we in part abandon reason and lean upon

instinct. For example, the craving for food in an infant is a radical instinct; but it is very far from being a perfect guide to conduct. To become so, it has to be educated. Without education it leads to excess, the excess creates disorder, the disorder induces an abnormal craving, and this in turn aggravates the disorder.

Intelligence, the intelligence of the parent, comes in to regulate and train this instinct in such manner that it becomes accustomed to a reasonable satisfaction, and has its importunity limited to reasonable intervals. Subsequently to this parental training the best results are reached through a long-continued and careful observation of the effects produced upon the individual by different kinds of food, taken at different intervals. When by this induction the most perfect adaptation of food-taking to the particular life has been discovered and applied, the whole organism accepts this superinduced regimen; and it forthwith stands without the rational supports which surrounded its formation. It is an acquired instinct, or habit, developed from a radical instinct through the intervention of reason; and this acquired instinct may, to some extent, be transmitted to posterity in the form of a tendency, just as the reverse tendency to intemperance may be transmitted. The same distinction has to be recognized in studying the instinct of animals. Some of these we must regard as radical; they cannot be traced to anything lying farther back. But others we discover to be superinduced by experience, and bequeathed to succeeding generations. This latter form has been called by naturalists "lapsed intelligence."

Now, does conscience, considered as an instinct, belong to the first or to the second class? It belongs to both. There is an elementary conscience which we cannot analyze. There is a derived complex conscience, the result of reason and experience, which we *can* analyze and study.

The first is an invariable element, the same (except as regards intensity) in every human being. It is the simple sense of duty, the "categorical imperative," the conviction of *ought* and *ought not*, of *must* and *must not*, in relation to certain actions to which the ideas of right and wrong have become attached. The other is this same simple conscience plus the results of personal enlightenment and of innumerable judgments of the human reason lying generations deep behind us. The experience of the race is, to a greater or less extent, consolidated in this latter; and, in the case of thoughtful men, experience and reason add distinctive characteristics which make the personal conscience a thing by itself.

To many minds, this gradually formed, reasoned conscience appears as an instinct pure and simple, because they are not given to analyzing their mental processes; and also because, in many cases, they have not used their own judgments, but have accepted a conscience that has come to them. The instinctive or executive part of this accepted conscience impresses itself daily upon their imaginations, while the rational or legislative process by which it was formed lies to a great extent beyond the range of their experience. There can be no question about our ability to trace the genesis of this complex conscience. There can hardly be a question about the usefulness of analyzing and studying it. But to consider this would carry us too far away from our subject. Having recognized the distinction between conscience as a radical and as a derived instinct, we must go back to the consideration of the former, that which I have called the simple sense of duty, the invariable factor. Is it possible for us to know anything about its evolution?

It is certainly very little that we can know about it. We cannot know much about any new product that comes

into the world. Yet we are able, I think, to say something of the conditions and circumstances of its advent, and we can study its antecedents. To begin with, I think we may safely say that it originally came into being as the result of conflict in a soul possessed of reflective reason. If conflict is not the only gate through which new elements come into the world, it certainly is the one through which most of the more highly evolved products enter; and with regard to the sense of duty, we know that in the experience of the individual it dawns upon the consciousness only as the attendant of self-conflict.

But conscience is not the necessary attendant of a divided self, for we find this in animals. Mr. Darwin has called attention to the sharp antagonism which often occurs in birds between two of their most powerful instincts, the maternal and the migratory. We are familiar with the strength of the former, which sometimes causes the most timid species to face danger in defense of their young. Yet the latter is so strong that, in the autumn, swallows and house-martins will frequently desert their young, leaving them to perish miserably in their nests. If we can reason in any degree from ourselves to animals, we must believe that, during the time of preparation for flight, many alternations of feeling are experienced before the result is reached. We are familiar with such alternations in the case of birds when their nests are approached. At one moment fear is uppermost, and the limb of a neighboring tree is sought, but the maternal instinct again becomes the stronger, and the intruder is almost if not quite attacked. In the case of deserting the young for migration, the conflict is in all probability of longer continuance; for the attention of the parent bird would be divided between the care of its young and the preparation for flight made by its fellows. Here, there-

fore, we seem to be on the very verge of the evolution of conscience.

But something more than this is necessary; something which we believe the bird does not possess, that is, the power of discerning a superiority in the impulse which urges it to the one action over that which urges it to the other. For the production of this we must have a self-reflecting soul. In the case of man (if we may entertain the hypothesis that there was once an anthropoid animal, not yet moral), let us suppose that in the crisis of a conflict between two instincts there some time emerged the perception that one course of action would result in a superior or more satisfactory self than the other, and at the same time a sense of *obligation* to realize the superior self because superior. Conscience is evolved. I do not pretend to say how. It is there. It is there just as a blossom-bud is on the branch where all our former experience would have led us to expect only a leaf-bud.

By what process of differentiation self-reflective intelligence has arisen in the race we shall never know, just as we can never know how it arises in the individual; neither can any physical research disclose why this imperative of conscience should necessarily arise with it. I say arise *with* it; for though we may in thought separate that part of conscience which I have called a radical instinct, yet it is only as the concomitant of reason that it has existence. It is always united with some conception which is its body or subject-matter; and it is first known to us as enforcing some particular action or principle that has become identified with the idea of right. This action or principle becomes so associated with it that the two together make up what I have already called the complex conscience. To consider the instinctive element by itself, therefore, is in a measure an abstraction; but it is not an arbitrary abstraction.

It is as if a throne of absolute authority were set up in the soul from the time when reason began to discriminate between its different impulses. When it first comes into view, this throne has a sovereign upon it in the shape of some particular interest or course of action; and, so long as it retains this position, order and self-respect in the individual depend upon the subjection of every other interest to this one. But there is that in expanding reason which ere long declares that this is only a provisional ruler. A larger conception of the same interest, or one lying back of it to which it must be referred, rises upon consciousness, and from this moment there is no peace till the new-comer is established upon the seat of power. This is the course of the development of conscience in the individual. It is the course, also, of its development in the race. As men became separated into nations, the rational element tended continually to differentiate the human conscience; so that the results reached by one nation became in some respects the contradiction of those reached by another. Yet, through all changes, that other element, the imperative which demands loyalty to the throne under all circumstances, has never changed. All men agree in their recognition of duty and the obligation to obey it, but they differ in their ideas of what constitutes duty.

Shall we, then, say that the complex or developed conscience has in it a divine element combined with a human element? That the instinctive part is God acting directly in the soul? That the rational part is purely human? To say this would be to make a clearly defined and easily grasped distinction. But it would not be the truth. We must, indeed, recognize God in the imperative of duty. There is no other rational explanation of the phenomenon. For although some instincts may be analyzed and traced back to creature intelligence, this one cannot be. We may

believe that it has come into the soul by a natural process; but to believe this is not to deny its divine origin, unless we at the same time deny the divine origin of natural process.

I hold this to be the truth: that, wherever we come upon factors in evolution that defy analysis, it is our privilege and duty to recognize God as acting immediately. In the physical world we may anticipate that what we regard as finalities will prove not to be so. Our analysis is arrested at a certain point, but there is nothing which forbids us to hope that this limit may be passed. But in the sphere of mind there are certain limits which seem to us in the nature of things impassable. To other intelligences they may not be impassable. Yet so long as certain factors remain final to us, we may see in them the finger and the voice of God. This is not unscientific. It is simply to rest the matter on the one basis possible to our minds. It is not to assume that no further analysis can be made, but that no amount of analysis ever has or can arrive at an originating cause other than intelligent will. After all our research, we can render to ourselves no rational account of that which we have discovered, unless — including all that is attributable to process in a parenthesis — we begin as before with God. I would therefore say that in the imperative of conscience, however it has come to be, we must recognize God as acting *directly*, in the same sense that we recognize Him as acting directly in other radical instincts.

But, it may be asked, is there nothing peculiar in this instinct that raises it above others? There certainly is; but this peculiarity is to be traced to that with which it is associated. It is from the rational element that the simple imperative of duty derives its distinction. It is to this that we are indebted for that illumination which obliges us to discriminate between actions as right or wrong, in dis-

tinction from their pleasantness or their unpleasantness. *But* this rational element is the variable element; it leads men and nations to results so wide apart as to make the morality of one the immorality of another. Have we not, therefore, reduced all morality to the status of a purely human product? And have we not relinquished our hold upon the idea that there is such a thing as absolute, immutable morality?

If we could discover no limit to the variability of the moral judgment this would be true. But here, as in every other department of nature, there is a uniformity underlying the diversity. There is a stream of tendency in the human reason that makes for righteousness. There are certain great lines of development which we can clearly see to be in the direction of normal development, and others which as plainly declare themselves to be abnormal and unnatural. The fundamental principles of the highest morality (Thou shalt love the Lord thy God with all thy heart, and thy neighbor as thyself) are dimly shadowed forth in the least developed conscience. As Professor Green has truly remarked, "It is not the sense of duty to a neighbor, but the practical answer to the question, Who is my neighbor? that has varied." Nor is this less true of the first half of the great law. It is not the sense of duty to God, but the answer to the question, Who and what is God? that has varied. So, again, it is not the sense of duty to self, but the answer to the question, In what does duty to self consist? that has varied. The recognition of these three relations, and the sense of responsibility and obligation in connection with them, are the common data of the human reason for the development of morality.

God has given us sufficient materials to work upon, but He has not done the work for us. He has given us far less than is claimed by some who would find the fully developed

way in conscience. But He has given us here in the same proportion as elsewhere. Evolution, to use a favorite expression of Charles Kingsley, discloses to us God in the act of "making things make themselves." Everywhere in nature we discover that the original bestowment to the creature was far less than we had supposed, and that the results which we see around us are, much more than we had supposed, the outcome of a coöperative activity.

It necessarily follows that these results, evolved as they have been through the agency of imperfect creatures, cannot have the same idea of perfection and of finality attached to them that they would have when regarded as the immediate gifts of God. This I must accept with regard to my own complex moral sense. It has been evolved from simple data introduced into the world with the advent of man, — data which nothing can alter. But the complete evolution from these is not yet. Therefore, while recognizing the divine authority of the ultimate basis of conscience, the God-given data from which it took its rise, I not only may, but *must*, hold my complex, partially-evolved conscience as an imperfect thing, — a thing which I may reasonably hope will become less imperfect. The past history and the present condition of the world conspire to teach me that this complex conscience is in part an inheritance which has come to me as the result of ages of conflict and experience, assisted by revelation, and that it is in part a thing of my own making, for which I am responsible; but that does not in any degree obscure the fact that the moral sense on which it rests is as absolute and sacred as God himself. The same history that teaches me the variableness and the immaturity of the one teaches me as certainly the finality and absoluteness of the other.

Nor is this the extent of my recognition of God in conscience. The author of our being has not launched us on

a sea of conflict, with vague directions, and left us to ourselves. In the intelligence that is *leading* the human race, as well as in that which at the beginning provided for it, we may discern the living and ever-present God. Conscience, in its highest activity, stands apart from and above us. As often as we seem to ourselves to be approaching some ideal of conduct that has been the goal of our striving, the rational conscience forthwith begins to outline for us a new ideal, higher up on the moral scale; and the instinctive conscience, with the same insistence that characterized its earliest demands, bids us reach it. I say conscience *in its highest activity;* for there is a conscience that reposes upon ordinances and laws, — a conscience of prescription. Its authority centres in human legislators and priests; and we are under it as under tutors and governors.

Conscience in its highest activity, on the other hand, derives its sanctions from principles and moving ideals; it is progressive, transcendental; it follows the prophets. In every living society these tendencies are, to some extent, in conflict; but it is a normal conflict, one without which the highest results were unattainable. The ballast of a ship may not say to the sails, I have no need of thee. It is only by the conflicting action of sails and ballast that the ends of navigation are realized. Yet, as a conscious, constructive agent is higher in the scale of being than the mechanism through which it works, so is the rational progressive conscience higher than that which is relatively stationary.

The *ideal-forming power* is at once the most mysterious and the most distinctive characteristic of man. It does not necessarily subserve high purposes. It is the faculty by which man sinks below the brute in progressive depravity, as well as that by which he climbs to a

perpetually higher plane of being. The sense of incompleteness and the consciousness of the possibility of a more perfectly satisfied self may give rise, on the one hand, to purely selfish ideals, in which gratified ambition or unbounded pleasure occupy the supreme place, and, on the other, to conceptions of a less definite but more exalted nature. In the pursuit of both these classes of ideals the soul falls short of perfect satisfaction. But there is this great difference: In the first case the end is soon reached, and there is nothing beyond. Selfishness returns upon self only to intensify the feeling of emptiness. But when moral satisfactions constitute the ideal of life, though they never yield the perfect content and rest that they seemed to offer, yet there is no disgust with self for that which has been wrought. Nor does conscience withhold a reward. It says "well done," though it may never say "well enough done." And though there is always a *better*, standing beyond the realized good, which makes us dissatified, yet the very presence of this *better* inspires new life, and expectation never fails.

In the *moral ideal*, then, we have found the true *nisus* of human evolution. We often hear the phrase "blind evolution." Unquestionably the evolution of the human soul is, in a measure, blind. It knows not the full cause or measure of its dissatisfaction, and it invariably underestimates the length and importance of the conflict on which it has entered. It is a deceptive evolution, in that the higher self, when reached, has not in it the full satisfaction that it promised. But the question as to the extent of *man's* blindness in evolution is a matter of indifference as compared with that which relates to the nature of the "power not ourselves" that has worked hitherto, and that now works. The question as to the blindness of

this power is the watershed between optimism and pessimism, between faith and despair, between a joyous enthusiasm and apathy. The answer to it has determined the character of one great civilization after another. The root conception out of which the Hindoo and Buddhist view of human life sprung was such an answer, and the deadly apathy of the Hindoo mind is its fruit. What other result could follow the education of generations in the belief that man is the victim of illusions, that he lives in a perpetual dream, tantalized by deceitful promises, and that the greatest evil of existence is the desire to be?

But to him who trusts the incentives of his developing moral nature, the fact of *human* blindness is the strongest reason for faith in an Intelligence, not his own, that is leading him. He cannot comprehend that Intelligence, for he is not yet able to comprehend the perfect ideal of humanity which he follows after. But as he knows the direction and some of the characteristics of the one, so he is able with confidence to infer the great characteristics of the other. The more nearly he approaches to the perfect type of man, the more truly will he be able to conceive of God.

APPENDIX B.

THE NECESSITY OF CONFLICT.

Our imaginations work most nimbly in their construction of a world of vitality and happiness from which all forms of conflict have been banished. But we have to remember that all such creations are pure abstractions, — dreams that find no indorsement in reality. Conflict is in the nature of things. Life cannot exist without it. The very first movement in the quickening of a germ is antagonism against forces that make for dissolution; and every successive movement is a sustained antagonism. Life struggles with death. The dormant principle that till now gave no hint of its existence, having become active and aggressive, lives by what it conquers. It transforms the material that surrounds it, and makes it minister to its own necessities. And what is true of this first stage of existence is true to the end of it. Life is a struggle, not alone or preëminently against other lives, but, more constantly and necessarily, against those very forces of nature that are the occasion of its vitality.

This truth has been expressed by the physiologist Bichat in a definition of life which, to our ordinary apprehension of the matter, is most startling. He calls it "the sum total of the functions which resist death." The supply of food, to secure which man engages in a hand-to-hand encounter with the world, is, when obtained, only the material with which to carry on a ceaseless battle with the oxidizing and destroying power of the air which

he breathes. The reality of this struggle is not apparent to those who, because of vigor, are easily superior in the strife. Conflict is to them the joy of existence. It produces only exhilaration and the consciousness of well-being. But when the life powers begin to flag, then there is no doubt about it.

Again, let us observe that life expands and increases in the direction of conflict. The law of mechanics, that movement is always in the line of the least resistance, does not hold when we come into the world of organized life. We cannot, indeed, reverse the proposition, and say that progress is in the line of the greatest resistance; for, beyond a given point, the pressure of the opposing forces becomes wholly or in part fatal. The life principle is engaged in a losing struggle; and unless retrogression is checked, the stimuli that were the occasions of life become the agents of "natural selection" for the removal of the unfit. But so long as there is progress, it is in that direction where the battle is hotly contested.

To say this is but another way of stating the fact that organisms develop most on that side which is most active. Animals that are determined in the direction of a predatory life develop skill and strength for attack. Those that are determined in an opposite direction develop swiftness to escape, or cunning to elude the predatory enemy. One great class of the laborers of Constantinople, the boatmen, have enormously developed arms; and another great class, the *hamals* or burden-carriers, have a most remarkable superiority in legs and backs. The Arab develops strength for enduring heat by his resistance to the burning rays of a desert sun. The Esquimaux develops strength for enduring cold by his resistance to the Arctic winters. The negro of the Gaboon River acquires the power of defying the deadly malaria of that region, and his descendant of

the American rice-swamps retains that power by continuing to face the enemy.

It is unnecessary for us to enlarge on this point. Wherever we look we see the principle exemplified. As by a thousand different languages we have reiterated to us the lesson that many of those arrangements in the universe, which we have been in the habit of considering purely prejudicial to life, are in truth the indispensable conditions and promoters of it. Remove them and there would be no life. There would be simply equilibrium, stagnation. Had they not been called into play, there would have been no creation. To find fault with them is simply to take the ground that non-existence is better than existence. While, therefore, there is the same necessity for regarding these agencies as pain-producing, we must at the same time recognize the fact that all the joy and gayety of animated nature proceed from them. We cannot conceive of life under other conditions. We have no grounds for assuming that it is possible under other conditions. Neither can we imagine happiness in the absence of either class of factors. There cannot be joy unless there are wants to be met. There can be no exhilaration except in the consciousness, real or illusory, of movement toward something better. There is no such thing as satisfaction except in the removal of dissatisfaction. The happiness of rest even is conditioned upon fatigue, and the recovery of a lost position.

The rudimentary nature of our self-knowledge is most strikingly illustrated by the persistent blundering of human beings in their pursuit of happiness; a blundering which has its cause in an utter misconception of the nature of it, and of the relation in which it stands to effort. One form of this misconception presents happiness to the imagination as a permanent state which may be produced by the possession of every external object of desire. Another

indicates it as the state which supervenes when, all wants having been gratified, there remains nothing to long for or strive after. It is this conception that lies at the basis of the Hindoo philosophy, and expresses itself in the doctrines of *màyà* (illusion) and *nirvâna* (the cessation of personal consciousness). The experience of life uniformly teaches that no object of desire, when attained, affords the content which it promised while it was yet an object of pursuit. The wise man, therefore, recognizing the deceitful nature of all the direct results of human striving, and seeing, also, that continued effort for satisfaction only gives birth to a never-ending series of wants, comes to the conclusion that a cessation of wants is the one thing to be coveted.

Solomon, or the writer who personates him in the Book of Ecclesiastes, goes over much the same ground. He is possessed of everything that a human being can be possessed of, — intellectual power, cultivated tastes, unbounded wealth, and the absolute command of his fellow-men. With such an equipment he gives himself to the task of discovering the secret of happiness. He turns his energies in every conceivable direction, only to find that the disappointment encountered in one pursuit is much like that encountered in another. In every case, when the quest has been carried as far as he is able to carry it, and he pauses to contemplate the direct results of his efforts, his soul sickens within him. As completed products they are utterly devoid of interest, and instead of giving happiness they weary and annoy him.

The truth of the picture as an illustration of human misconception and folly is most clearly marked in the circumstance of *repetition*. The same experiment is tried over and over again with the same results, and yet without any approach to a discovery of the principle underlying the uniformity. When the pursuit of wisdom is seen to yield

only an increase of sorrow, he gives his life to mirth and wine, without any question as to the soundness of the principle on which he is working; when this, in turn, is seen to be only vexation of spirit, he enters with the same ardent expectation upon a variety of other pursuits. He gives his whole mind to the construction of great works and beautiful houses till his inventive powers are exhausted; he devotes himself to horticulture and arboriculture; he makes collections of all kinds; and finally he cultivates music. But when all is finished he can only say of the accumulated results that they are "vanity and vexation of spirit." He bemoans himself bitterly because of this repeated disappointment. His conclusion is that all is vanity, or, in modern phrase, that this is the worst possible world, and that life is not worth living. "Therefore I hated life."

Let us clearly observe that all this disappointment and the dismal conclusion are the outcome of a concentration of attention upon the external direct results of human activity, coupled with utter blindness as to the lesson taught by the indirect results. Pursuing happiness as a direct end, as a thing that can be captured, caged, and possessed, he grasps nothing but emptiness; and this so fills his thoughts that he can find no consolation in the remembrance of that happiness which, during the whole course of varied activities, has flowed through his soul, as it were from the side. He acknowledges that his heart rejoiced in all his labor. But it is a sore grievance to him that it has always ceased with the labor, that he cannot find a way to generate it except as the indirect result of effort and the overcoming of difficulties; in short, that he cannot produce an environment which will pour happiness into him as a passive recipient.

Again, reflection will show us that happiness does not

continue to flow from any *fully realized* state of being, any more than it does from the possession of external acquisitions. The desire of all desires, the constant element in all healthful human life, is the yearning to *become*. What, then, shall we say of the pleasures of idleness? I think it is safe to say that they are non-existent. Absolute idleness is absolute wretchedness. What we call idleness is simply a relative thing. It is a condition in which activities are largely unconscious. Rest may, indeed, be happiness. But rest is recuperation. It is a condition of activity and effort on the part of the vegetative processes, and in healthful organisms the sense of enjoyment gives place to uneasiness and a craving for activity as soon as the waste has been repaired.

Happiness, then, is the concomitant of progress. It is the singing of the soul, the rejoicing of the creature in prosperity of being. It is the consciousness that the ends of existence are being realized. It is Nature's indorsement of effort, the constant attendant of its evolutionary process. More than this even, it is to some extent the guide and director of it. It is, indeed, true, that men actually develop along widely divergent lines, and find happiness in so doing. But we have to remember that our truest evolution depends upon the development of many faculties, and that much of this development takes place consecutively. The energy of our life-current streams now in one direction, now in another, and in each happiness attends it so long as the activity is normal and not excessive. It is possible for us to have a considerable degree of it even while realizing the ends of being in a very partial and one-sided way. But this imperfect way cannot be long pursued without the production of a counterbalancing unhappiness. One of two things takes place. Either the one-sided development narrows into an all-absorbing, devouring passion, like

avarice or greed of power, or it runs itself out into the dreariness and emptiness of *ennui*. There is no true development in either case, but, on the one hand, a morbid cancer-like growth, that eats up the very springs of life and joy and, on the other, the failing of desire and the cessation of all movement.

Evolution and happiness, then, depend on the constant springing of new wants. Except the satisfaction of one want plants at the same time the germ of another, there is an end of progress in any given direction. *Wants*, therefore, the most mysterious outcome of the process, are at the same time its motive power. There is no intelligent evolution without them. They are the rungs of the ladder by which we mount. Whence they come we know not. Why, when one want is satisfied, another higher up on the scale should take its place, we cannot begin to conceive. Rational creatures though we be, these unforeseen increments of evolution never cease to surprise us. Every time a new want makes its appearance we awake to the fact that we are *new creatures*. It seemed, as we looked forward, as if the requirements of life would be met by the satisfaction of wants of which we were then conscious. But now, while the old creature is satisfied, the new one has all the restlessness and importunity of youth. This is the pledge to us of the possibility of further evolution and of attendant happiness. The true line of progressive being, therefore, is clearly indicated to be that in which there will be no cessation of wants that may be progressively realized. If such a continuous development is possible, and if we can discover its direction, we have good reason to believe that we have a definite knowledge of the main drift of human evolution.

But happiness is not the only worthy end of evolution. There is the achievement of moral character. Could this

have been secured by a method radically different from that which has been made known to us? A state of perfectly adjusted social relations may be conceived of independently of a process of overcoming. Such a world might have been, so far as we can see, created by a sovereign mandate. But from the thought of a world so created we must be careful to eliminate every idea of morality. And this is just what the philosophers, who find the goal of evolution in the cessation of conflict, more or less consciously do. Mr. Herbert Spencer manipulates the word *right* until it comes to mean nothing more than *agreeable*, and then distinctly tells us that "among the best examples of absolutely right actions to be named are those arising where the nature and the requirements have been moulded to one another before social evolution began."[1] His illustration of this is the relation that exists between a healthy mother and a healthy infant, while imparting and receiving food.

The goal of such an evolution is essentially a return to its starting-point; there has been no gain except in complexity. The type of the perfectly moral man is most nearly approximated by those exceptional persons who have led decorous lives because they have been carefully screened from everything involving conflict and temptation. These are to-day the most advanced fruits of human evolution. But if this is a correct rendering of the great world process, we cannot avoid the conclusion that the fully developed man will be far less blessed, less noble, less happy, than many of those who fought his battles for him.

Is, then, a continuous development possible? Can we discover that true line of progress on which there will be no cessation of wants that may be successively gratified?

[1] *Data of Ethics*, p. 261.

I think we are speaking truly when we say that love is a want; that the highest love is a moral want, and it can be kept in existence only by the continuance of that moral energy that has given birth to it. Love to God would not have the moral character that it has if it could have come into the human soul without conflict. The greatest power which rational man has is the power of training his wants. "Thou *shalt* love the Lord thy God." In this we touch the very spring and root of responsible self-creation. Our love grows in the direction of our efforts. In its germinal stages love to God is the response of the soul to a naturally, *divinely* implanted ideal. When this response becomes active in voluntary effort, the indirect increment of such effort is a *higher* idea of God and of self as related to Him. If we may conceive the evolution of a soul as a succession of stages, this process is repeated at every stage. The ideal expands, strivings are renewed, love deepens, the moral personality moves on to a fuller realization of itself.

There is no conceivable end to such a process, for effort and overcoming need never cease. We may not, indeed, have to strive forever against a lower self, but there is no conceivable limit to external fields of activity. Even with our present environment, progress is most rapid and most real, not when conflict is directed immediately against self, but when we are engaged in helping others to fight the good fight. And as we have been permitted to be workers together with God on this present stage of action, we may reverently believe that, through all changes of environment, we shall continue to be co-laborers with Him who in all nature manifests himself as overcoming.

INDEX.

Agassiz, Louis, 150.
Arago, 104.
Arnold, Matthew, 361.

Bagehot, Walter, 380, 410.
Bain, Professor, 57, 172, 173.
Bichat, 499.
Binet, M. Alfred, 180, 181, 198–200, 204, 218, 219–221.
Brooks, Professor W. K., 343, 344, 346.

Challis, Professor, 101, 102.
Church, Dean, 396, 397.
Clerk-Maxwell, 104.
Clifford, Professor, 174.
Cooke, Professor J. P., 98, 115, 143, 165, 197.
Cope, Professor E. D., 156, 157, 259, 327–329, 337, 379.
Crichton-Browne, Sir James, 220, 221.

D'Alembert, 102.
Darwin, Charles, 260–265, 284, 490
Darwin, Dr. Erasmus, 258.
De Coulanges, Fustel, 381, 386–388, 432.
De Quincey, Thomas, 399.
Descartes, 228, 229.

Eimer, Theodor, 269, 271, 273, 274, 298, 302, 303.
Euler, 102.

Faraday, Michael, 176.
Fichte, 39–42, 44–47, 63, 77, 78.

Gray, Dr. Asa, 260.
Green, Professor T. H., 481, 482.

Haeckel, Ernst, 329, 330.
Hamilton, Sir William, 121, 122.
Hartmann, Edward von, 109, 259, 330–341.
Hegel, 39, 41–45, 47, 48, 63, 123.
Heine, Heinrich, 35.
Herbert, Thomas Martin, 185.
Hering, Dr Ewald, 207, 209.
Huxley, Professor Thomas, 88, 141, 201, 215–217.

James, Professor William, 319.
Jevons, Professor, 175, 177, 255, 256.

Kant, Emmanuel, 33, 36, 76–78, 83, 119–121, 129.
Kessler, Professor, 353, 354.
Krapotkin, Prince, 352, 353.

Lamarck, 259, 260.
Lange, Albert, 35.
Lecky, 386, 427, 432.
Le Conte, Dr. Joseph, 144, 145, 147, 148.
Leibnitz, 194.
Lewes, G. H., 152, 155–157, 210, 269, 270, 301, 302.
Lotze, Hermann, 91, 92, 95, 96, 105, 106, 190, 196, 231, 232, 256, 257.

Martineau, Dr. James, 476, 477.
Maudsley, Dr., 361, 362.

Mencius, 459.
Mendelejeff, 142.
Mulford, Dr. Elisha, 240.
Murphy, J. J., 259, 325, 326.

Nägeli, 269, 271, 272, 274.
Newman, Cardinal John Henry, 11, 364, 365, 402, 403, 405, 423, 439.
Newton, Sir Isaac, 103, 177.

Pfleiderer, Dr., 35.

Ribot, 296.
Richet, M. Charles, 180, 181.
Romanes, 298, 300, 301.

Schopenhauer, Arthur, 35, 109, 337.
"Scottish Philosophy," 124.
Seth, Professor, 43, 44, 47, 48.
Spencer, Herbert, 39, 51–60, 62, 63, 65, 67–75, 77–79, 109, 172, 184, 185, 188, 189, 201, 202, 269, 486, 506.
Spinoza, 225, 228–230.
Stallo, J. B., 92, 97, 99, 100, 102, 157–159.
Stephen, Leslie, 455.

Taylor, Isaac, 394.
Thomson, Sir William, 99.
Tyndall, Professor John, 176.

Uhlhorn, Dr., 390, 391.

Wallace, Alfred Russell, 265.
Weismann, 266, 267, 274, 282, 296.
Witwer, Professor, 99.

BL 51

LIBRARY OF CONGRESS
0 022 208 199 3